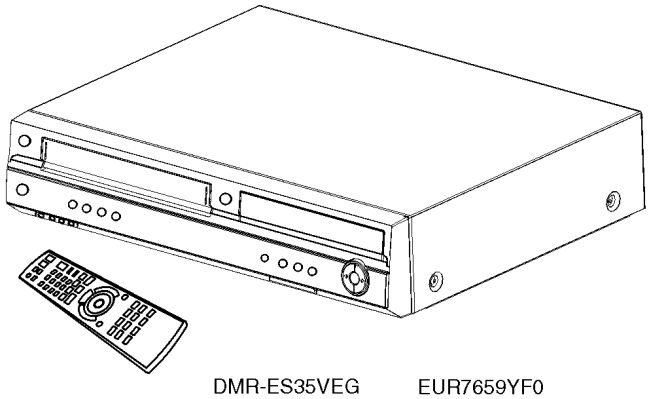
ORDER NO.MAD0605013CE

Service Manual

DVD Video Recorder



DMR-ES35VEG EUR7659YF0
DMR-ES35VEC EUR7659YF0

DMR-ES35VEG
DMR-ES35VEC

Vol. 1

Colour

(S).....Silver Type

Note 1:
This model's DVD-RAM Drive / Digital P.C.B Module is:
RFKNES35VEG / RFKNES35VEC

Note 2:
This model´s VHS Mechanism is
R4-MECHANISM-CHASSIS-FOR-EURO-MODEL:
Order No. MAD0403002C2

CAUTION:
Pairing of DVD-RAM Drive and Digital P.C.B. as "RAM/DIGITAL P.C.B. MODULE" have to be replaced together. If the Module is changed, the DVD-RAM Drive has to be re-aligned because the alignment data for the DVD-RAM Drive is stored in Digital P.C.B. .

Panasonic®

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⚠ WARNING

This service information is designed for experienced repair technicians only and is not designed for use by the general public.
It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product.
Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

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1 SAFETY PRECAUTIONS

1.1. GENERAL GUIDELINES

1. Be careful during removing metal parts, sharp edges.
2. When servicing, observe the original lead dress. If a short circuit is found, replace all parts which have been overheated or damaged by the short circuit.
3. After servicing, see to it that all the protective devices such as insulation barriers, insulation papers shields are properly installed.
4. After servicing, make the following leakage current checks to prevent the customer from being exposed to shock hazards.

1.1.1. LEAKAGE CURRENT COLD CHECK

1. Unplug the AC cord and connect a jumper between the two prongs on the plug.
2. Measure the resistance value, with an ohmmeter, between the jumpered AC plug and each exposed metallic cabinet part on the equipment such as screw heads, connectors, control shafts, etc. When the exposed metallic part has a return path to the chassis, the reading should be between 1MΩ and 5.2MΩ.
   When the exposed metal does not have a return path to the chassis, the reading must be infinity.

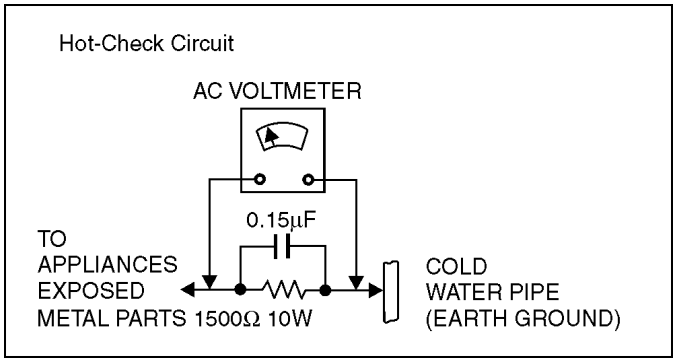


Figure 1

1.1.2. LEAKAGE CURRENT HOT CHECK

1. Plug the AC cord directly into the AC outlet. Do not use an isolation transformer for this check.
2. Connect a 1.5kΩ, 10 watts resistor, in parallel with a 0.15μF capacitors, between each exposed metallic part on the set and a good earth ground such as a water pipe, as shown in Figure 1.
3. Use an AC voltmeter, with 1000 ohms/volt or more sensitivity, to measure the potential across the resistor.
4. Check each exposed metallic part, and measure the voltage at each point.
5. Reverse the AC plug in the AC outlet and repeat each of the above measurements.
6. The potential at any point should not exceed 0.75 volts RMS. A leakage current tester (Simpson Model 229 or equivalent) may be used to make the hot checks, leakage current must not exceed 1/2 milliampere. In case a measurement is outside of the limits specified, there is a possibility of a shock hazard, and the equipment should be repaired and rechecked before it is returned to the customer.

2 WARNING

2.1. PREVENTION OF ELECTROSTATIC DISCHARGE (ESD) TO ELECTROSTATIC SENSITIVE (ES) DEVICES

Some semiconductor (solid state) devices can be damaged easily by static electricity. Such components commonly are called Electrostatic Sensitive (ES) Devices. Examples of typical ES devices are integrated circuits and some field-effect transistor-sand semiconductor "chip" components. The following techniques should be used to help reduce the incidence of component damage caused by electrostatic discharge (ESD).

1. Immediately before handling any semiconductor component or semiconductor-equipped assembly, drain off any ESD on your body by touching a known earth ground. Alternatively, obtain and wear a commercially available discharging ESD wrist strap, which should be removed for potential shock reasons prior to applying power to the unit under test.
2. After removing an electrical assembly equipped with ES devices, place the assembly on a conductive surface such as aluminum foil, to prevent electrostatic charge buildup or exposure of the assembly.
3. Use only a grounded-tip soldering iron to solder or unsolder ES devices.
4. Use only an anti-static solder removal device. Some solder removal devices not classified as "anti-static (ESD protected)" can generate electrical charge sufficient to damage ES devices.
5. Do not use freon-propelled chemicals. These can generate electrical charges sufficient to damage ES devices.
6. Do not remove a replacement ES device from its protective package until immediately before you are ready to install it. (Most replacement ES devices are packaged with leads electrically shorted together by conductive foam, aluminum foil or comparable conductive material).
7. Immediately before removing the protective material from the leads of a replacement ES device, touch the protective material to the chassis or circuit assembly into which the device will be installed.

   Caution

   Be sure no power is applied to the chassis or circuit, and observe all other safety precautions.
8. Minimize bodily motions when handling unpacked replacement ES devices. (Otherwise harmless motion such as the brushing together of your clothes fabric or the lifting of your foot from a carpeted floor can generate static electricity sufficient to damage an ES device).

IMPORTANT SAFETY NOTICE

There are special components used in this equipment which are important for safety.
These parts are marked by ⚠ in the schematic diagrams, Exploded Views and replacement parts list.
It is essential that these critical parts should be replaced with manufacturer's specified parts to prevent shock, fire, or other hazards. Do not modify the original design without permission of manufacturer.

2.2. PRECAUTION OF LASER DIODE

CAUTION:

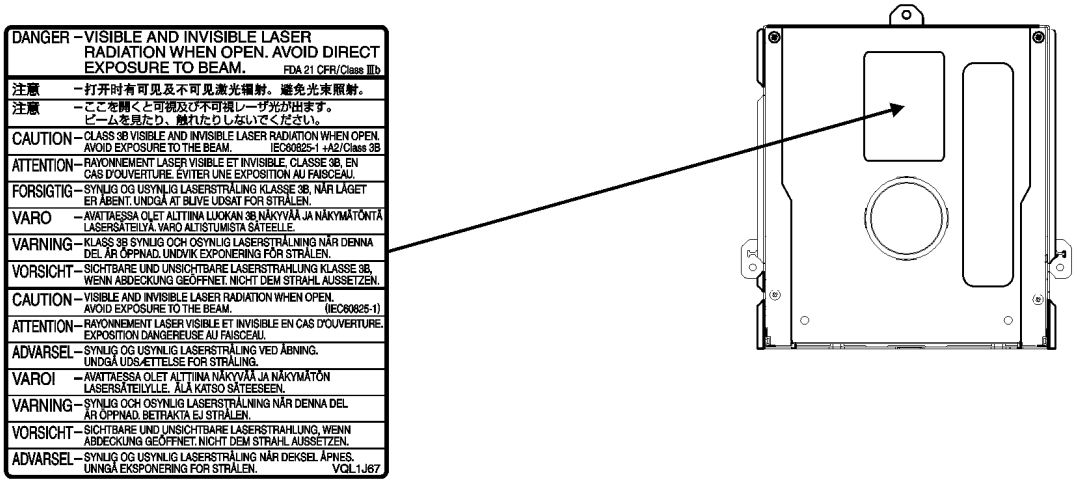
This product utilizes a laser diode with the unit turned “on”, invisible laser radiation is emitted from the pickup lens.
Wave length: 662 nm/795 nm
Maximum output radiation power from pickup: 100µ W/VDE.
Laser radiation from the pickup lens is safety level, but be sure the followings:

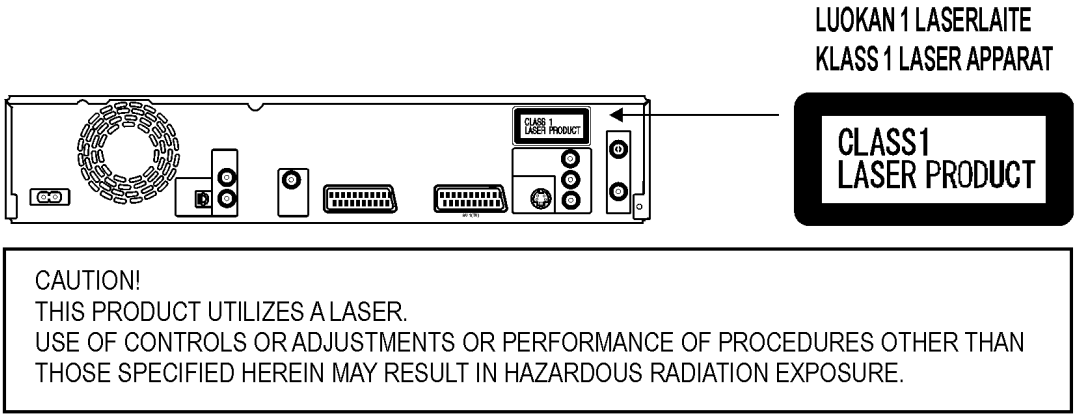
1. Do not disassemble the optical pickup unit, since radiation from exposed laser diode is dangerous.
2. Do not adjust the variable resistor on the pickup unit. It was already adjusted.
3. Do not look at the focus lens using optical instruments.
4. Recommend not to look at pickup lens for a long time.

ACHTUNG:

Dieses Produkt enthält eine Laserdiode.
Im eingeschalteten Zustand wird unsichtbare Laserstrahlung von der Lasereinheit ausgestrahlt.
Wellenlänge: 662 nm/795 nm
Maximale Strahlungsleistung der Lasereinheit: 100µ W/VDE.
Die Strahlung der eingeschalteten Lasereinheit ist ungefährlich, wenn folgende Punkte beachtet werden:

1. Die Lasereinheit nicht zerlegen, da die Strahlung an der freigelegten Laserdiode gefährlich ist.
2. Den werksseitig justierten Einstellregler der Lasereinheit nicht verstellen.
3. Nicht in die Fokussierlinse blicken.
4. Auch nicht mit optischen Instrumenten in die Fokussierlinse blicken.


DANGER – VISIBLE AND INVISIBLE LASER RADIATION WHEN OPEN. AVOID DIRECT EXPOSURE TO BEAM. FDA 21 CFR/Class IIIb
注意 – 打开时有可见及不可见激光辐射。避免光束照射。
注意 – ここを開くと可視及び不可視レーザ光が出ます。ビームを見たり、触れたりしないでください。
CAUTION – CLASS 3B VISIBLE AND INVISIBLE LASER RADIATION WHEN OPEN. AVOID EXPOSURE TO THE BEAM. IEC60825-1 +A2/Class 3B
ATTENTION – RAYONNEMENT LASER VISIBLE ET INVISIBLE, CLASSE 3B, EN CAS D'OUVERTURE. ÉVITER UNE EXPOSITION AU FAISCEAU.
FORSIGTIG – SYNLIG OG USYNLIG LASERSTRÅLING KLASSE 3B, NÅR LÅGET ER ÅBENT. UNDGÅ AT BLIVE UDSAT FOR STRÅLEN.
VARO – AVATTAESSA OLET ALTTIINA LUOKAN 3B NÄKYVÄÄ JA NÄKYMÄTÖNTÄ LASERSÄTEILYÄ. VARO ALTISTUMISTA SÄTEELLE.
VARNING – KLASS 3B SYNLIG OCH OSYNLIG LASERSTRÅLNING NÄR DENNA DEL ÄR ÖPPNAD. UNDVIK EXPONERING FÖR STRÅLEN.
VORSICHT – SICHTBARE UND UNSICHTBARE LASERSTRAHLUNG KLASSE 3B, WENN ABDECKUNG GEÖFFNET. NICHT DEM STRAHL AUSSETZEN.
CAUTION – VISIBLE AND INVISIBLE LASER RADIATION WHEN OPEN. AVOID EXPOSURE TO THE BEAM. (IEC60825-1)
ATTENTION – RAYONNEMENT LASER VISIBLE ET INVISIBLE EN CAS D'OUVERTURE. EXPOSITION DANGEREUSE AU FAISCEAU.
ADVARSEL – SYNLIG OG USYNLIG LASERSTRÅLING VED ÅBNING. UNDGÅ UDSÆTTELSE FOR STRÅLING.
VARO! – AVATTAESSA OLET ALTTIINA NÄKYVÄÄ JA NÄKYMÄTÖN LASERSÄTEILYLLE. ÄLÄ KATSO SÄTEESEEN.
VARNING – SYNLIG OCH OSYNLIG LASERSTRÅLNING NÄR DENNA DEL ÄR ÖPPNAD. BETRAKTA EJ STRÅLEN.
VORSICHT – SICHTBARE UND UNSICHTBARE LASERSTRAHLUNG, WENN ABDECKUNG GEÖFFNET. NICHT DEM STRAHL AUSSETZEN.
ADVARSEL – SYNLIG OG USYNLIG LASERSTRÅLING NÅR DEKSEL ÅPNES. UNNGÅ EKSPONERING FOR STRÅLEN. VQL1J67



CAUTION!
THIS PRODUCT UTILIZES A LASER.
USE OF CONTROLS OR ADJUSTMENTS OR PERFORMANCE OF PROCEDURES OTHER THAN THOSE SPECIFIED HEREIN MAY RESULT IN HAZARDOUS RADIATION EXPOSURE.

2.3. SERVICE CAUTION BASED ON LEGAL RESTRICTIONS

General description about lead free Solder (PbF)

- The lead free solder has been used in the mounting process of all electrical components on the printed circuit boards used for this equipment in considering the globally environmental conservation.
- The normal solder is the alloy of tin (Sn) and lead (Pb). On the other hand, the lead free solder is the alloy mainly consists of tin (Sn), silver (Ag) and Copper (Cu), and the melting point of the lead free solder is higher approx. 30 degrees C (86°F) more than that of the normal solder.

Service caution for repair work using Lead Free Solder (PbF)

- The lead free solder has to be used when repairing the equipment for which the lead free solder is used.
- To put lead free solder, it should be well molten and mixed with the original lead free solder.
- Remove the remaining lead free solder on the PCB cleanly for soldering of the new IC.
- Since the melting point of the lead free solder is higher than that of the normal lead solder, it takes the longer time to melt the lead free solder.
- Use the soldering iron (more than 70W) equipped with the temperature control after setting the temperature at 350±30 degrees C (662±86°F). When soldering or unsoldering, please completely remove all of the solder on the pins or solder area and be sure to heat the soldering points with the Pb free solder until it melts enough.

Definition of PCB Lead Free Solder being used

- The letter of “Pbf is printed either foil side or component side using the lead free solder.

Recommended Lead Free Solder (Service Parts Route.)

- The following 3 types of lead free solder are available through the service parts route.

  RFKZ03D01K----------(0.3mm 100g Reel)

  RFKZ06D01K----------(0.6mm 100g Reel)

  RFKZ10D01K----------(1.0mm 100g Reel)

Note

- Ingredient: tin (Sn), 96.5%, silver (Ag) 3.0%, Copper (Cu) 0.5%, Cobalt (Co) / Germanium (Ge) 0.1 to 0.3%

3 SERVICE NAVIGATION

3.1. SERVICE INFORMATION

This service manual contains technical information which will allow service personnel to understand and service these models.
Please place orders using the parts list and not the drawing reference numbers.

1. This service manual does not contain the following information, because of the impossibility of servicing at component level.
   - Schematic Diagram, Block Diagram,
     Exploded View, Parts List and P.C.B. layout of
     RAM / Digital P.C.B. Module
2. The following categories are recycling module part.
   Please send them to Central Repair Center.
   - RAM / Digital P.C.B. Module:
     DMR-ES35VEG: RFKNES35VEG
     DMR-ES35VEC: RFKNES35VEC
3. If the circuit is changed or modified, this information will be followed by supplement service manual to be filed with original service manual.
4. Adjustment procedures, Disassembly Procedures and Assembly Procedures for VCR Mechanism Chassis are separate volume from this service manual. Please refer to the service manual for R4 Mechanism Chassis for EURO model (MAD0403002C2).

3.2. CAUTION FOR DivX

Please give the information “Warning for Customers who use the DivX Video-on-Demand content.” always to the customer together with the product, if you have to exchange EEPROM, P.C.B. including EEPROM or the product itself.
Also attach these information to every service part (EEPROM or P.C.B. including EEPROM).
This complete Information is needed for every customer who is using the DivX Video-on-Demand Serivce.

Appendix:

* Parts that memorize user¡s information are only on the EEPROM.
* The registration of Registration Code is possible for half a year up to 6 recorders up to 10 recorders a year.

Every replacement of EEPROM or P.C.B. including EEPROM spends one of this.

- Registration Code is memorized in the EEPROM (RFKFxxxxxxx)
- If the Power & Digital I/F P.C.B. or the EEPROM will be changed a new Registration Code different from the previous one will be generated.
- In this case the customer, who is useing DivX Video-on-Demand sercive, can not longer play any content that was or is purchased under that old registration code.
- Therefore the customer will need to register a new registration code.

*Copy this page and cut on the dotted line and give the lower half to your customer.

Warning for Customers who use the DivX Video-on-Demand content.

1. The registration code has been changed for the repair of the product or the product exchange.
2. Obtain and register a new registration code, otherwise you will no longer be able to play DivX Video-on-Demand content.
3. Follow the procedure on the DivX Video-on-Demand web site to register at
   http://vod.divx.com/
   * If you do not use the DivX Video-on-Demand content, please ignore this warning.

4 SPECIFICATION

Power supply:	AC 220-240 V, 50/60 Hz
Power consumption:	26 W +/-1,3 W Power Save mode: 2 W+/-0,4 W
Dimensions and Mass:	430 (W) × 351 (D) × 84 (H) mm (excluding protrusions) / 5.4 kg
Operating temperature range:	+5 to +40°C
Operating humidity range:	35 to 80 % RH (no condensation)

Pickup:
- Laser power and Wave length: CLASS 2/CLASS 1 / 662 nm/780 nm
- No hazardous radiation is emitted with the safety protection
- Laser performance: Class 3 B / Class 3 A (optical scan unit)

(NORSK) Bølgelengde:	662 nm / 780 nm
Laserstyrke	Ingen farlig stråling sendes ut
Video Recording signal:	PAL-BGH (EG / EC) PAL-I (EG) MESECAM (EG / EC) NTSC (only from extern and DVD) SECAM-BG (only input)
DVD Signal system:	PAL 625/50, PAL 525/60 NTSC (playback on PAL TV)
DVD Region number:	Region No. 2
DVD Video Recording format:	DVD-RAM / DVD-R/ DVD-RW/ DVD-R Double Layer/ DVD+R/ DVD+RW/ DVD+R Double Layer/ Video MPEG2 (Hybrid VBR) Audio: Dolby Digital 2 CH

DVD Recording, Playable discs:

DVD-RAM:	12 cm 4.7 GB / 9.4 GB / 8 cm 2.8 GB
DVD-R:	12 cm 4.7 GB / 8 cm 1.4 GB
DVD-R Double Layer:	12 cm 8.5 GB
DVD-RW:	12 cm 4.7 GB
DVD+R:	12 cm 4.7 GB
DVD+R Double Layer:	12 cm 8.5 GB
DVD+RW:	12 cm 4.7 GB

DVD approximate Recording time:

XP: 10 MBps	60 min
SP: 5 MBps	120 min
LP: 3 MBps	240 min
EP: 1.7 / 1.2 MBps	360 - 480 min

Playable disctype:
- DVD-Video, DVD-Audio
- CD-Audio (CD-DA), Video CD, SVCD, DivX
- CD-R/CD-RW (CD-DA, Video CD formatted discs)
- MP3 (audio), JPG (picture)
- Maximum number of tracks and groups recognizable:
- 999 tracks and 99 groups

TV tuner system:	VHF: CH E2-CH E12 A-H2 (Italien) UHF: CH21-CH69 CATV: S01-S05 (S1-S3), S1-S20 (M1-U10), S21-S41
RF out system:	without RF converter
Video Recording system:	4 rotary heads (helical scanning system)

Video input:

EURO AV (AV 1 / AV 2)	21 pin connect. (1.0 Vp-p, 75 Ω terminated)
VIDEO IN (AV 3 front input)	cinch connect. (1.0 Vp-p, 75 Ω terminated)
S-Video (front input)	SVideo connect. (1.0 Vp-p, 75 Ω terminated)
Component Video	3 cinch connector (Y: 1.0 Vp-p, PB: 0,7 Vp-p, PR: 0,7 Vp-p) 625 I / 625 p, 525 I / 525 p (Progress Interl.)
DV input:	IEEE 1394 Standard (4 pin) (PAL / NTSC)

Video output:

EURO AV (AV 1 / AV 2)	21 pin connector (1.0 Vp-p, 75 Ω terminated)
VHS / DVD cinch	21 pin connector (1.0 Vp-p, 75 Ω terminated)
DVD (only) cinch	21 pin connector (1.0 Vp-p, 75 Ω terminated)

DVD RGB video output:

RGB output level:	0.7 Vp-p (75 Ω) +/-10 %
Output terminal:	AV 1 (21 pin)
Number of terminals:	1 system

Audio heads:

1 stationary head	Mono
2 channels	Hi-Fi Sound-Stereo

Audio input:

EURO AV (AV 1 / AV 2)	21 pin connector: -6 dBµV (500 mV)
AUDIO IN (AV 3 front input)	cinch connector: -6 dBµV (500 mV)

Audio output:

VHS / DVD	cinch connector: -6 dBµV (500 mV)
EURO AV (AV1 / AV2)	21 pin connector: -6 dBµV (500 mV)
DVD optical output	digital audio output

Audio characteristics:

S/N ratio	Normal: more than 43 dB (SP) Hi-Fi: 65 dB DVD: 115 dB
Frequence responce	Normal: 80 Hz - 8 kHz Hi-Fi: 20 Hz - 20 kHz DVD: 4 Hz - 22 kHz (linear audio) 48 kHz sampling DVD: 4 Hz - 44 kHz (linear audio) 96 kHz sampling CD Audio: 4 Hz - 20 kHz
Total harmonic distortion:	CD Audio: 0.0025 %

Dynamic range:

VCR:	more than 90 dB
DVD (linear audio):	more than 98 dB
CD audio:	more than 96 dB

Videotape speed and Recording time (PAL / SECAM 240 min. tape):

SP:	23.39 mm/s, 240 min.
LP:	11.695 mm/s, 480 min.
EP:	7.796 mm/s, 720 min.
FF / REW time:	60 sec. (180 min. tape)

Videotape speed and Recording time (NTSC 240 min. tape):

SP:	33.35 mm/s, 168 min.
EP:	11.12 mm/s, 505 min.

Winding Speed (180 min tape):
- FF time approximate 60 sec.
- REW time approximate 43 sec.

Note:
Specifications are subject to change without notice.
Mass and dimensions are approximate.

MPEG Layer-3 audio decoding technology licensed from Fraunhofer IIS and Thomson multimedia.

This product incorporates copyright protection technology that is protected by method claims of certain U.S. patents and other intellectual property rights owned by Macrovision Corporation and other rights owners. Use of this copyright protection technology must be authorized by Macrovision Corporation, and is intended for home and other limited viewing uses only unless otherwise autherwise authorized by Macrovision Corporation. Reverse engineering or disassembly is prohibited.

Apparatus Claims of U.S. Patent Nos. 4,631,603, 4,577,216, and 4,819,098, licensed for limited viewing uses only.

Manufactured under license from Dolby Laboratories. "Dolby" and double-D symbol are trademarks of Dolby Laboratories.

"DTS" and "DTS 2.0 + Digital Out" are trademarks of Digital Theater Systems, Inc.

■ Built-in decoders
You can play discs with these symbols.

5 NEW FEATURE

5.1. ABOUT DivX

5.1.1. GENERAL

DivX is a new video compressing format that is applied

MPEG-4 technology to improve quality and the compressibility and it is developed by the DivXNetworks, Inc., Video file of high resolution and the high picture quality can be made thought it is a high compressibility.

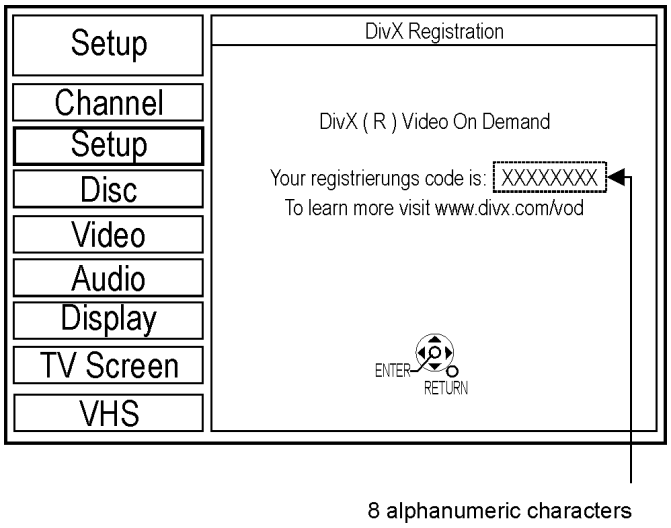
DivX codec is necessary for converting video to DivX file and playback files made.

5.1.2. OPERATING INSTRUCTIONS ABOUT DivX VIDEO-ON-DEMAND CONTENT

DivX Video-on-Demand (VOD) content is encrypted for copyright protection. In order to play DivX VOD content on this unit, you first need to register the unit.

Follow the online instructions for purchasing DivX VOD content to enter unit ɪ s registration code and register unit. Visit www.divx.com/vod for mor information.

Display unitɪs registration code:



- We recommend that you make a note of this code for future reference.
- After playing DivX VOD content for first time, another registration code is then displayed in “DivX Registration”. do not use this registration code to purchase DivX VOD content. If you use this code to purchase DivX VOD content and the play content on this unit, you will no longer be able to play any content that you purchased using previous code.
- If you purchase DivX VOD content using a registration code different from this unitɪs code, you will not be able to play this content. (“Authorization Error” is displayed.)

Some DivX VOD content can only be played a set number of times.

When you play this content, remaining number of plays is displayed. You cannot play this content when number of remaining plays is zero. (“Rental Expired” is displayed.)

When playing this content

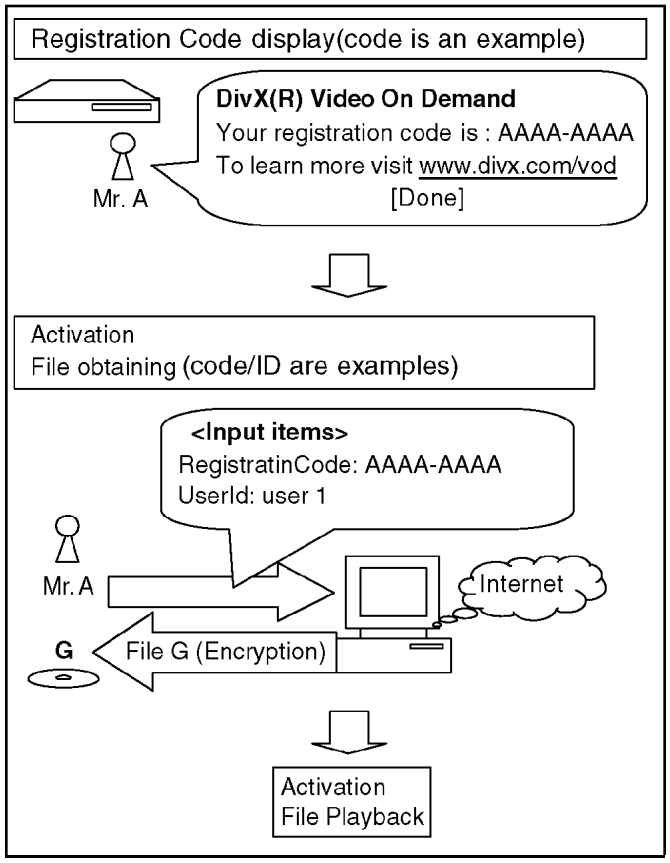
- Number of remaining plays is reduced by one if
  - – you press [POWER]
  - – you press [STOP]
  - – you press [backwards SKIP], [backwards SLOW / SEARCH] or [forwards SLOW / SEARCH] etc. and arrive at another content or start of content being played.
  - – scheduled [DRIVE SELECT] to change drive

* Resume functions do not work.

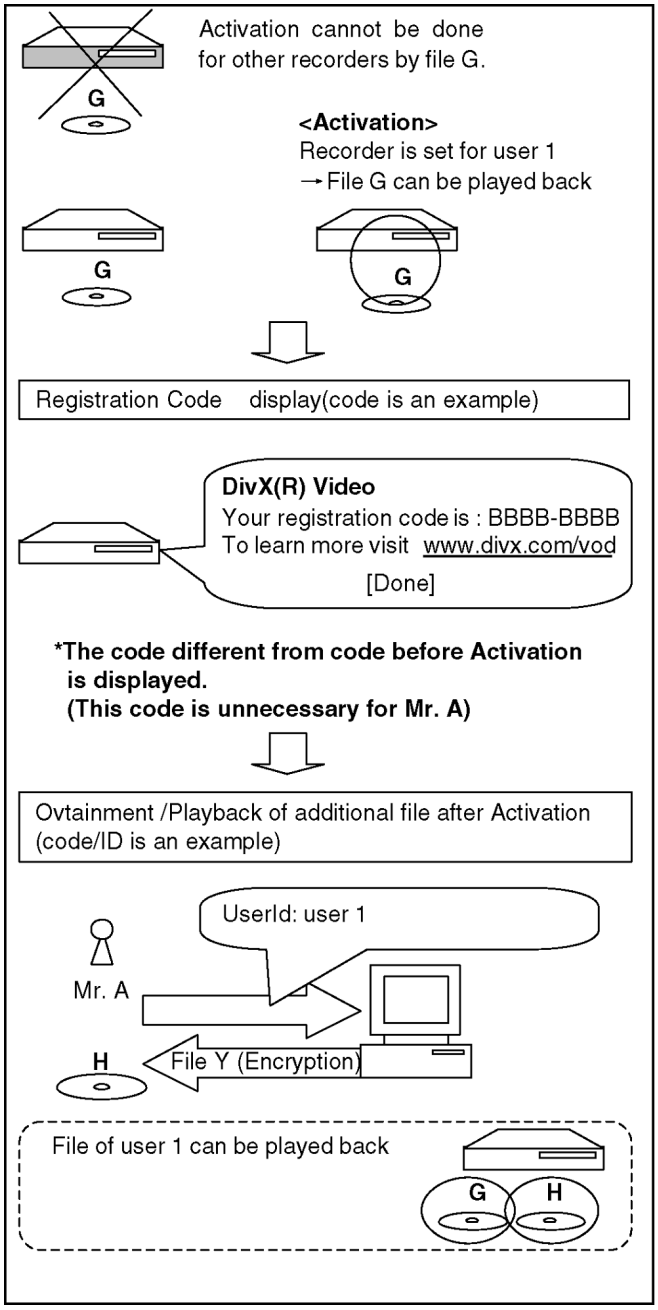
Typical Playback procedure of DivX VOD (Video On Demand):

Case 1	When DivX VOD is used newly.
Case 2	When EEPROM or P.C.B. includin EEPROM was replaced for repairing.
Case 3	When recorder was exchanged to another recorder for repairing.
Case 4	When customer own second recorder.
Case 5	When owner of recorder was changed to another.

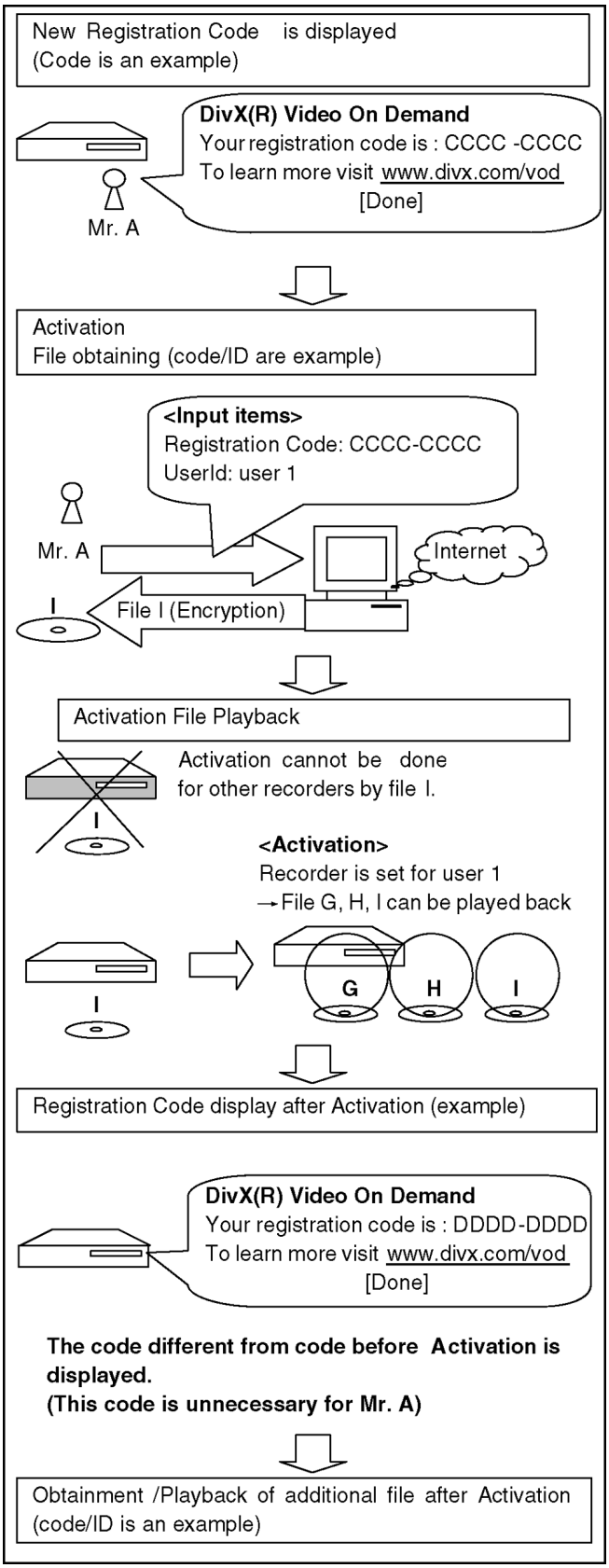
CASE 1 **WHEN DivX IS USED NEWLY**



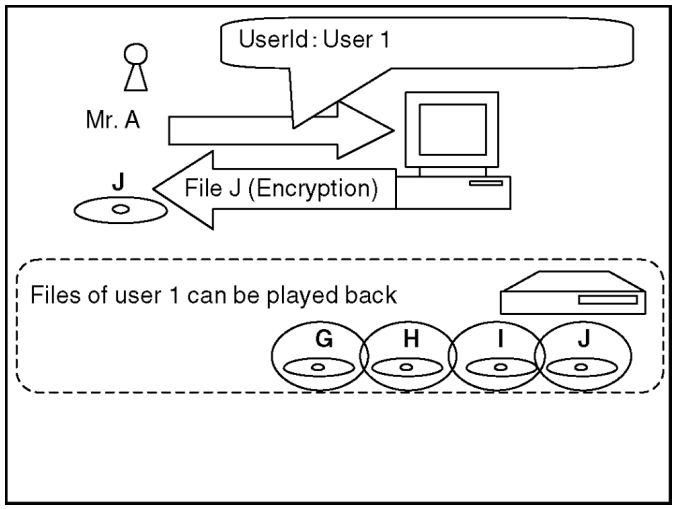
Case 1



CASE 2	WHEN EEPROM OR P.C.B. INCLUDING EEPROM WAS REPLACED FOR REPAIRING
CASE 3	WHEN RECORDER WAS EXCHANGED TO ANOTHER RECORDER FOR REPAIRING

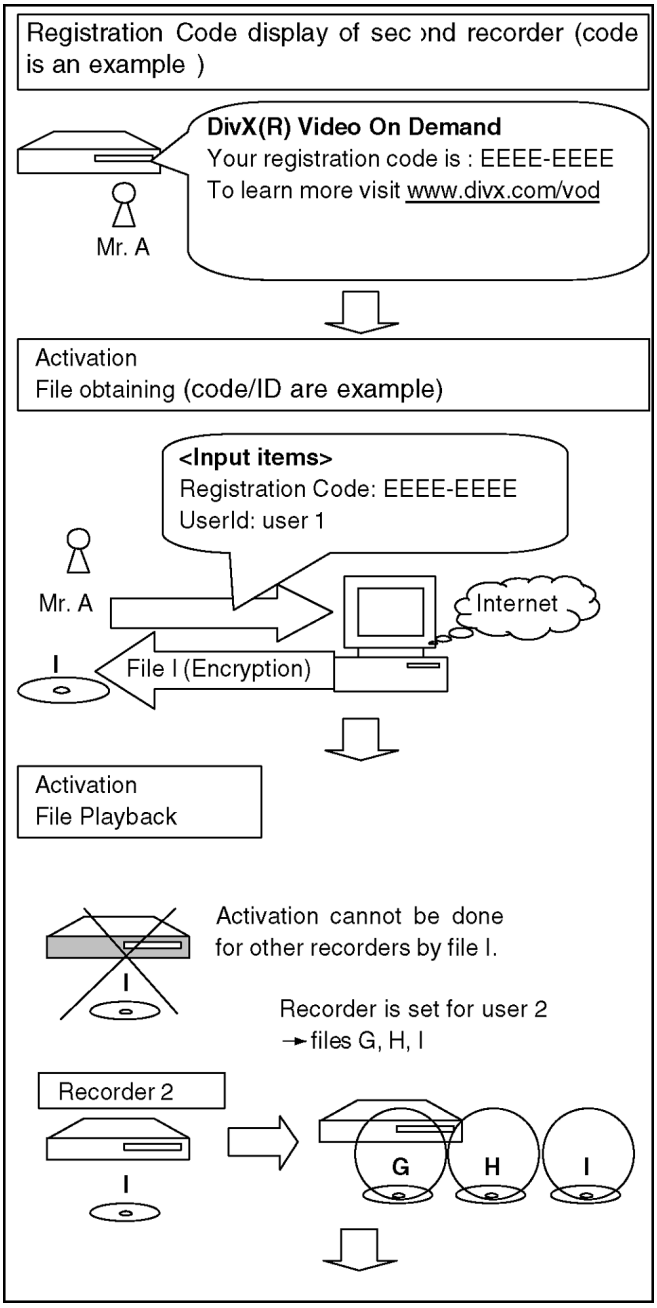


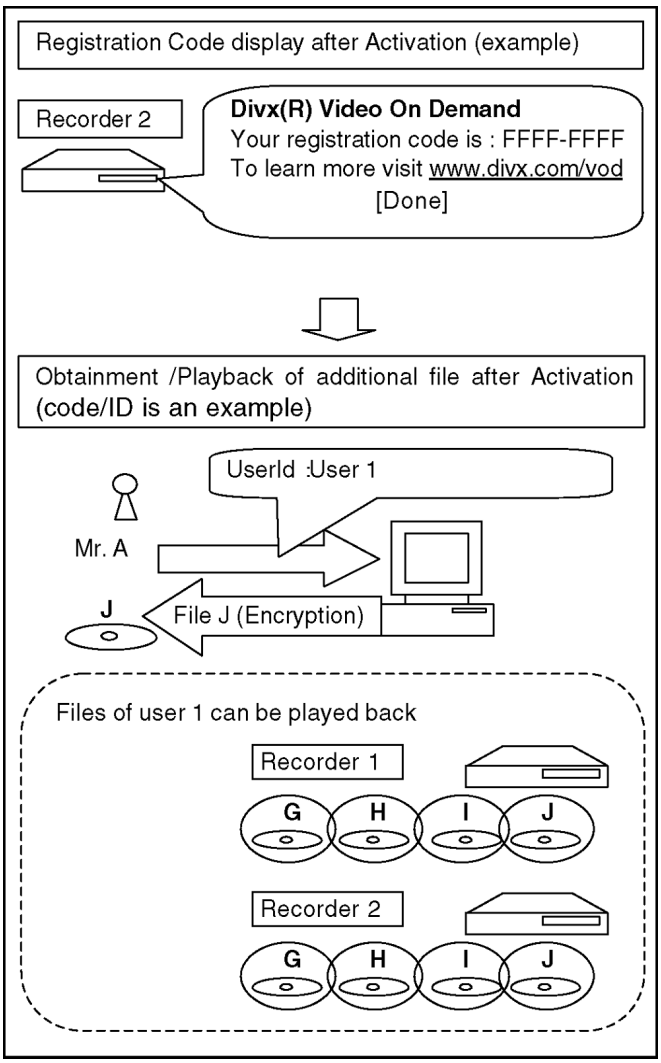
Case 2



Case 3

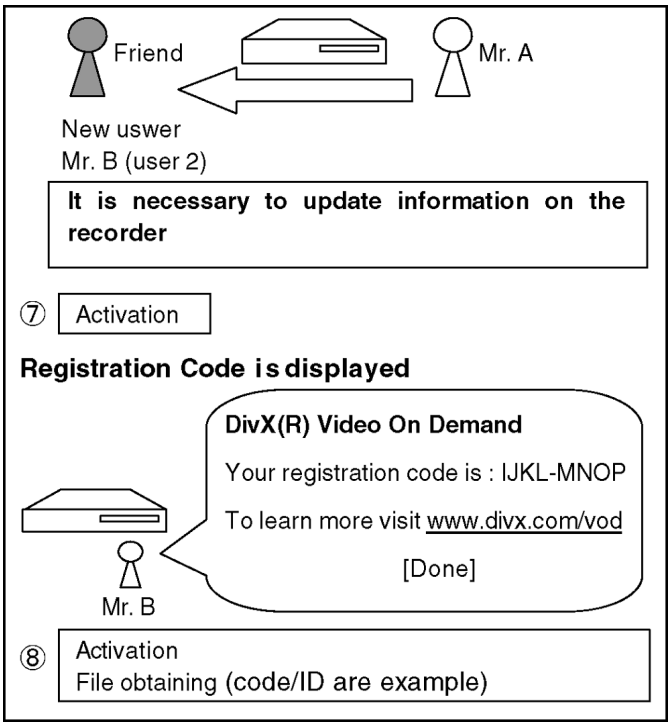
CASE 4 WHEN CUSTOMER OWN SECOND RECORDER



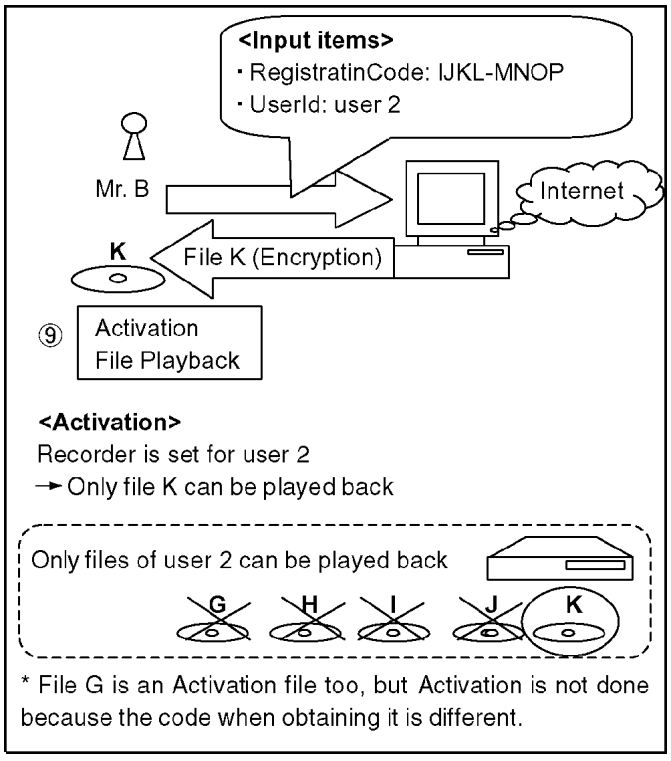


Case 4

CASE 5	WHEN OWNER OF RECORDER WAS CHANGED TO ANOTHER



Case 5



FILE KIND

(There are two kinf of Activation files as follows too.)

・Rental: There is a playback limitation

・Purchase: Unrestricted

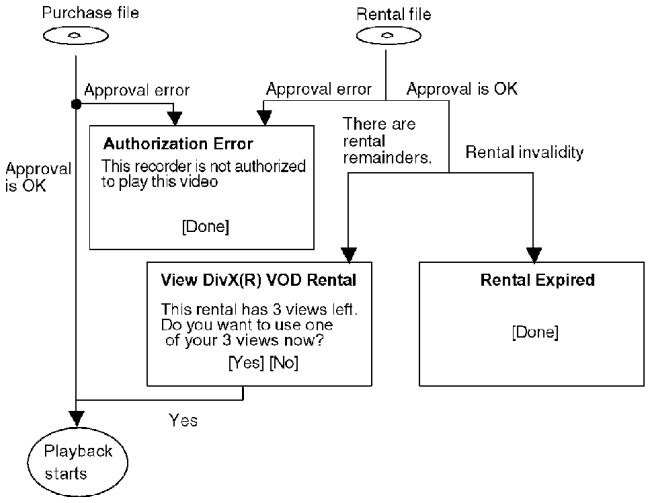
Also there is next file as DRM files besides the above-mentioned.

・Base:
It is not necessary to approve though the contents is being endode.
If it is recorder/player for DRM, any can play back. (It is the same as usual DivX file when seeing from user.)

SCREEN SHIFT (Error display)

Wheter approval is OK or not.

Wheter the recorder is corresponding to User information on the file or not.



5.1.3. ABOUT DivX DRM

Divx file includes file to which DRM(Digital Right Management) is applied and file not applied.

This item is a content that relates only in treating file

to which DRM is applied.

1. Registration Code display function
2. User's registration and approval function
3. Rental management function

1) Registration Code display function

Registration Code is alphanumeric character sequence

8 bytes inputted as recorder information, in case a use

purchases or renta DivX DRM file in a network.Registration code is a character sequence generated

at random, and differs in each recorder.Moreover, Registration code is updated by new user

authentication ever if same recorder.

2) User's registration and approval function

- Only one user can register for one recorder. If user's registration is not done with the recorder, DivX file cannot be played back.
- User's registration is performed only when a DivX DRM file is first chosen by recorder
- DivX DRM file that can perform user's registration is only a file that is registered Registration Code and purchased or rented.
- User authentication is performed whenever DivX DRM file is played back. Error message is displayed when failing in user's registration and approval.

3) Rental management function

There are purchase file without registration of number of playback and rental files with registration of number of playback as Divx file. Number of playback of rental file is counted by the recorder. When rental file is played, remaining number of times that can be played back will be shown to users, recorder requests users to input yes or no. Following specifications have been installed for the rental files in the purpose to clarify the count condition of number of times of playback.

- Conditions on counting number of times of play.

1. When a file was opened successfully. (At the time of playback start)
2. When you have done review operation from the start. (Skip to file head)
   - At this time, remaining number of times that can be played back and confirmation message

     [Do you play really?] are displayed.
   - When the playback point has been skipped to the top of title, number of playback is not counted if the top of title was not recognized.
   - Even if the power failure occurs after start of playback of rental file, number of times of playback counted at start of the playback is held as it is.

     (Though playback stops by power failure,

     the number of times of playback is not counted.)

When it has reached head of title, the playback is ended, and screen becomes DivX menu (There is no resume) and then cursor is located on title that has been played back.Then if the same file was continuously played back, it begins to playback from the file head.

Note:

Above mentioned stored user information and number of times of playback are not erased by update of firmware or by initialization by test mode.

6 LOCATION OF CONTROLS AND COMPONENTS

Remote Control

DVD/VHS

Stand-by/on switch
Press to switch the unit from on to stand-by mode or vice versa. In stand-by mode, the unit is still consuming a small amount of power.

DIRECT TV REC — Direct TV record to DVD

DRIVE SELECT — **Buttons to switch** between DVD and VHS

DIRECT NAVIGATOR — DIRECT NAVIGATOR TITLE VIEW
Main menu of DVD video.

ENTER — Direction buttons in the menu navigation.
DVD Selection of groups ▲▼ or titles.
◀II II▶ Still picture or time loop playback.

SUB MENU (S) — DVD Launch sub-menus.

PROG/CHECK — DVD TIMER RECORDING menu
VHS Timer recording menu

STATUS — Time and detail information appears on the screen for 5 seconds.

INPUT SELECT — Switch button of the AV input between AV1, AV2 and AV3 (front) / TP (DVD) and DC (VHS).

CANCEL ✳ / RESET — Cancel button

ShowView — DVD ShowView menu
VHS ShowView menu

SLOW/SEARCH ◀◀ REW / ▶▶ FF — DVD **SLOW/SEARCH:** Search or slow motion playback
VHS **REW/FF:** Fast forward or rewind from stop mode. Forward or reverse scene search during playback mode.

STOP ■ — **Stops recording, replay or forward/reverse action.** Press and hold more than 3 seconds to remove cassette.

PAUSE II — **Pause a recording or playback.**

REC ● — DVD Record
VHS Record

EXT LINK — Record with external recording control

MANUAL SKIP — **Only DVD:**
Skip 30 sec. forward.

DELETE — **Delete:**
Delete Title.

⏏ **EJECT** — **Front Panel Button:** Remove cassette

⏏ **OPEN/CLOSE** — **Front Panel Button:** Open and close the disc tray

TV

⏻ — Turn the television set on and off.

AV — Select the AV input on the television set.

CH / VOLUME — **CH**: Select the channel on the television set.
VOLUME: Volume control of the television set.

1 2 3 4 5 6 7 8 9 0 — **Number buttons - direct input**
VCD 5: 0 + 5 15: 1 + 5
MP3 JPEG 5: 0 + 0 + 5 15: 0 + 1 + 5

FUNCTIONS — DVD FUNCTIONS selection menu.
VHS VHS FUNCTIONS menu.

ENTER — Select or save a setting.

RETURN — Exit a menu.

DISPLAY B — DVD Launch the disc menu.

TIME SLIP/◀◀ JET REW — DVD **TIME SLIP:** Select the timeframe to be skipped.
VHS **JET REW:** Fast rewind to the beginning of the cassette.

AUDIO A — DVD Depending on the disc, select the audio channel and or the sound track.
VHS Press several times to select sound playback mode.

TRACKING/V-LOCK / CH — **CH**: Channel select button.
TRACKING/V.LOCK + / -
VHS Optimisation of the playback picture.

PLAY ▶ — **Starts playback.**
PLAY/ x1.3 RAM
You can increase the playback speed.
Hold **PLAY** ▶ during playback.

SKIP/INDEX — DVD **SKIP:** Skip chapters, titles, or pictures.
VHS **INDEX:** Search for the beginning of a recording.

REC MODE — DVD Record mode button (XP, SP, LP, EP)
VHS Record mode button (SP, LP, EP)

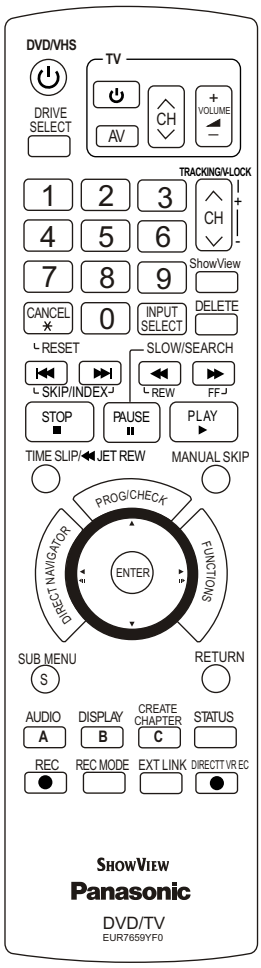
DVD ERASE / C — Erase a title during playback.
Move the selected station.

CREATE CHAPTER C — Split the recording into chapters.

VHS/DVD EXT LINK — **Front Panel Button:** Recording with external recording control

DUBBING ▶ — **Front Panel Button:** Copy from VHS to DVD

◀ DUBBING — **Front Panel Button:** Copy from DVD to VHS



7 OPERATING INTRUCTIONS

7.1. (DVD) TAKING OUT THE DISC FROM RAM-DRIVE UNIT WHEN THE DISC CANNOT BE EJECTED BY OPEN/CLOSE BUTTON

7.1.1. (DVD) FORCIBLE DISC EJECT

7.1.1.1. (DVD) WHEN THE POWER CAN BE TURNED OFF.

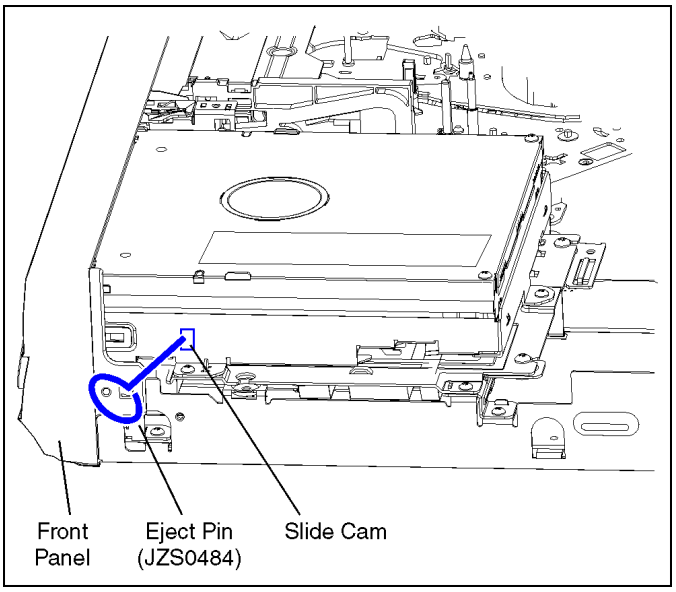
1. Turn off the power and press [STOP], [CH UP] keys on the front panel simultaneously for 5 seconds.

7.1.1.2. (DVD) THE POWER CAN NOT BE TURNED OFF.

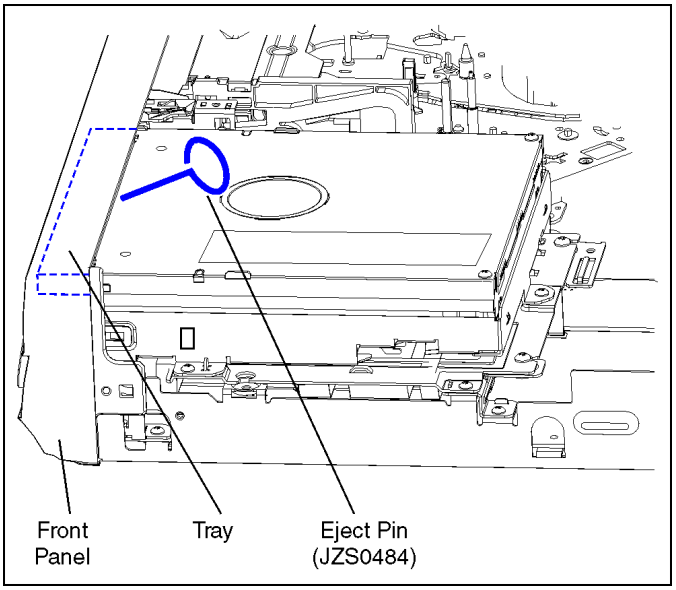
1. Press [POWER] key on the front panel for over 10 seconds to turn off the power forcibly and press [STOP] [CH UP] keys on the front panel simultaneously for 5 seconds.

7.1.2. (DVD) WHEN THE FORCIBLE DISC EJECT CAN NOT BE DONE.

1. Turn off the power and pull out AC cord.
2. Remove the Top Case.
3. Push in SLIDE CAM by Eject Pin (JZS0484) or minus screw driver (small) to eject tray slightly.



4. Push out Tray by Eject Pin (JZS0484) or minus screw driver (small).



7.2. (VHS) REMOVING OF CASSETTE TAPE

When the cassette tape could not be removed after an electrical malfunction, there are 2 ways to remove a cassette tape.

7.2.1. (VHS) REMOVAL BY COMPULSORY UNLOADING.

If Service Mode can be activated when the power can not be turned on, this operation is able.

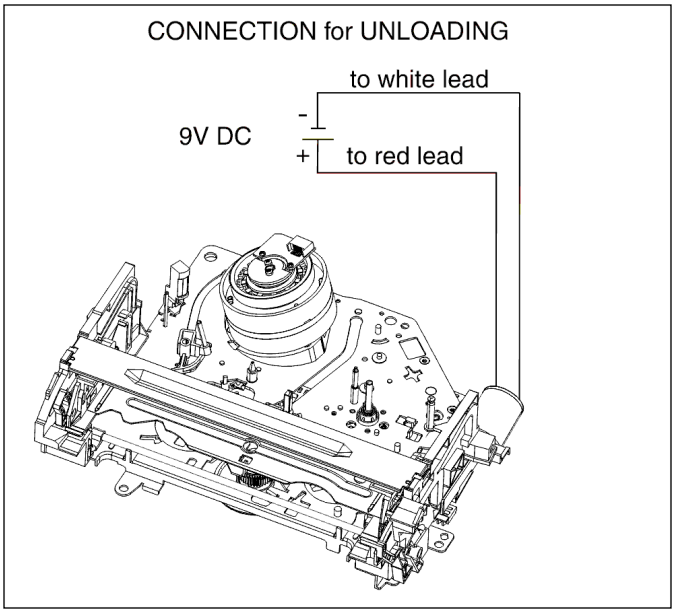
1. Press [STOP] and [EJECT] button simultaneously for more than 3 seconds and set Drive to [VHS] and set the Service Mode to 7.
2. Press [STOP] button in order to unload the mechanism. (Pay attention to tape slack)

   Service Mode Display:

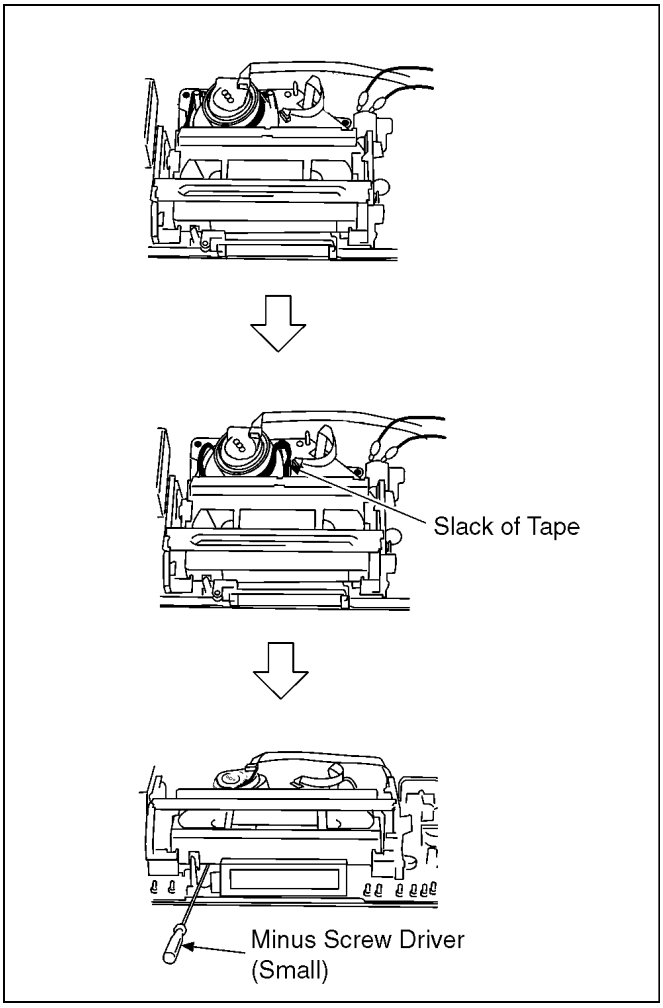
   7 ** ** (STOP) → 7 0L ** (EJECT)

7.2.2. (VHS) REMOVAL BY MANUAL OPERATION.

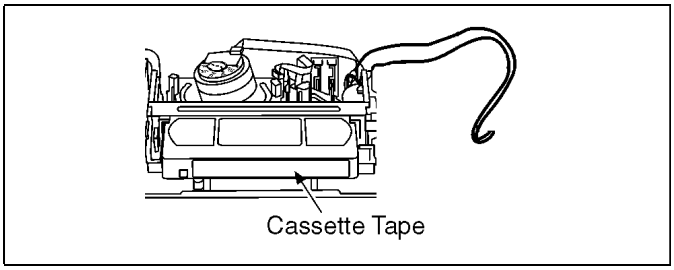
1. Disconnect the AC plug, and remove the Top Panel and the Front Panel by referring to the Disassembly Procedures.
2. Connect a batterie (9V spec.) to the Loading Motor in series for supplying 9V to rotate the Loading Motor.



3. Stop unloading just before unloading will be completed. The tape becomes slack.
4. Rotate the S-Reel by a small minus screwdriver to remove the slack tape.



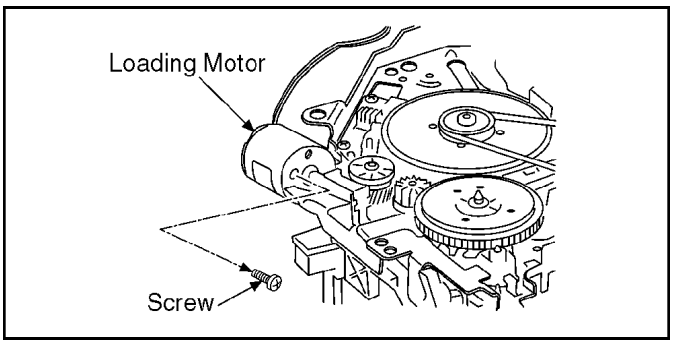
5. Then unload again to remove the cassette tape.



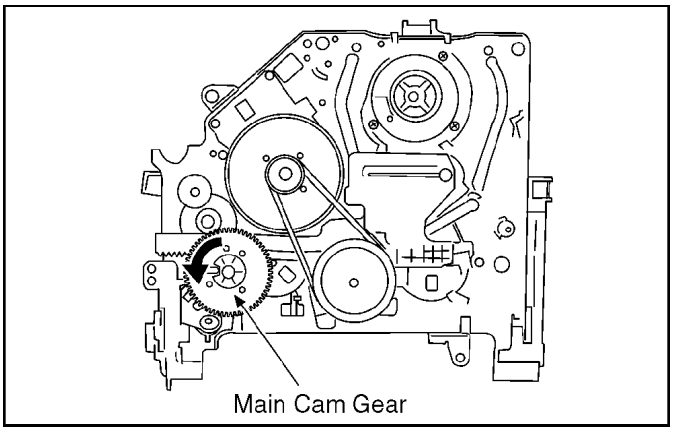
7.2.3. (VHS) TAKE OUT CASSETTE TAPE MANUALLY AFTER REMOVING THE MECHANNISM

1. Disconnect the AC plug, and remove the Top Panel, Front Panel and the Mechanism by referring assembling and disassembling description.

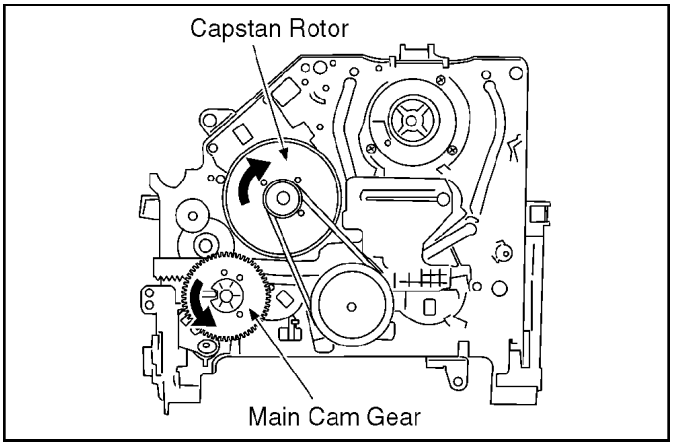
2. Remove the Screw and remove the Loading Motor.



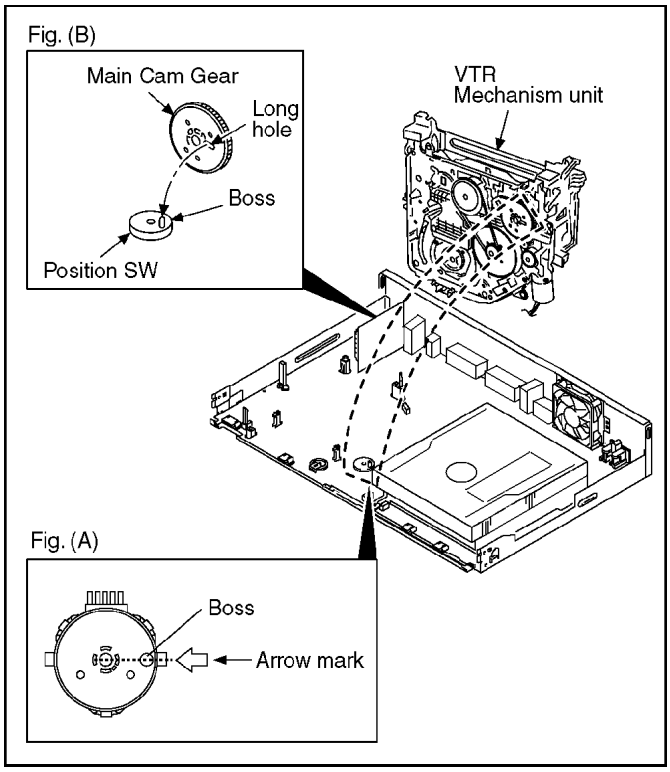
3. Rotate the Main Cam Gear counter-clockwise until just before the unloading will be completed.



4. Rotate the Capstan Motor clockwise to remove the slack tape.
5. Rotate the Main Cam Gear counter-clockwise again to remove the cassette-tape.



6. Attach Loading Motor and tighten the screw.
7. Set the Position Switch to EJECT POSITION certainly and attach the mechanism to chassis.



8 SERVICE MODE

8.1. (DVD) SELF-DIAGNOSIS AND SPECIAL MODE SETTING

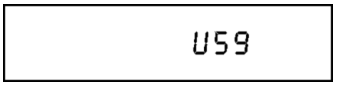
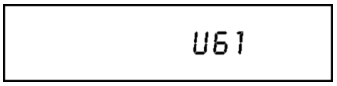
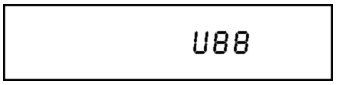
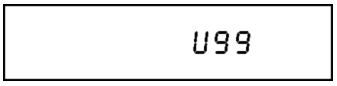
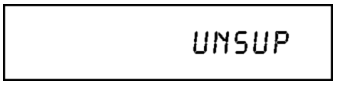
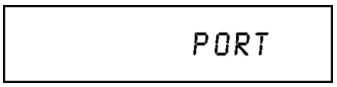
8.1.1. (DVD) SELF-DIAGNOSIS FUNCTIONS

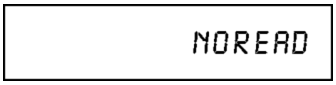
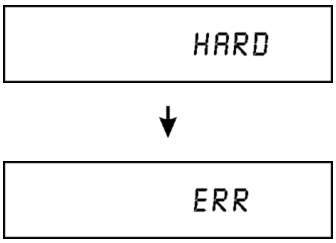
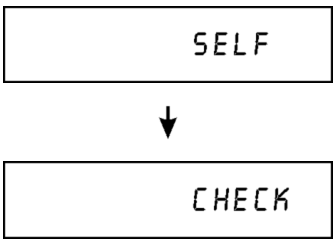
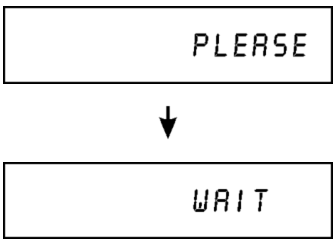
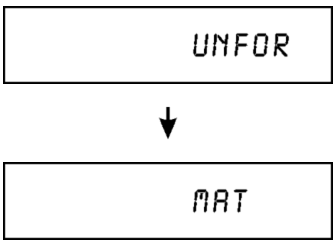
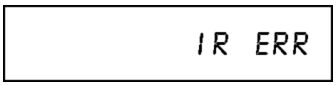
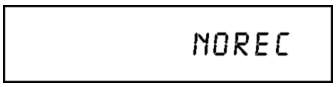
Self-Diagnosis Function provides information for errors to service personnel by “Self-Diagnosis Display” when any error has occurred.

U, H** and F** are stored in memory and held.**

You can check latest error code by transmitting [0] [1] of Remote Controller in Service Mode.

Automatic Display on FL will be cancelled when the power is turned off or AC input is turned off during self-diagnosis display is ON.

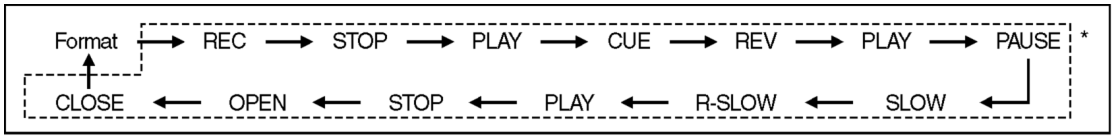
Error Code	Diagnosis contents	Description	Monitor Display	Automatic FL display
U30	Remote control code error	Display appears when main unit and remote controller codes are not matched.	No display	“*” is remote controller code of the main unit. Display for 5 seconds.
U59	Abnormal inner temperature detected	Display appears when the drive temperature exceeds 70°C. The power is turned off forcibly. For 30 minutes after this, all key entries are disabled. (Fan motor operates at the highest speed for the first 5 minutes. For the remaining 25 minutes, fan motor is also stopped.) The event is saved in memory as well.	No display	 “U59 is displayed for 30 minutes.
U61	The unit is carrying out its recovery process (with no disc in the disc tray).	* The unit detected an error while recording or playing with **with no disc in the disc tray.** The unit is carrying out its recovery process. This process restores the unit to normal operation. The unit is not broken. Wait until the message disappears.	No display	
U88	The unit is carrying out its recovery process (with no disc in the disc tray).	* The unit detected an error while recording or playing with **with no disc in the disc tray.** The unit is carrying out its recovery process. This process restores the unit to normal operation. The unit is not broken. Wait until the message disappears.	No display	
U99	Hang-up	Displayed when communication error has occurred between Main microprocessor and Timer microprocessor.	No display	 Displayed is left until the [POWER] key is pressed.
F00	No error information	Initial setting for error code in memory (Error code Initialization is possible with error code initialization and main unit initialization.)	No display	No display
F58	Drive hardware error	When drive unit error is detected, the event is saved in memory.	No display	No display
F34	Initialization error when main microprocessor is started up for program recording	When initialization error is detected after starting up main microprocessor for program recording, the power is turned off automatically. The event is saved in memory.	No display	No display
UN-SUPPORT	Unsupported disc error	*An unsupported format disc was played, although the drive starts normally. *The data format is not supported, although the media type is supported. *Exceptionally in case of the disc is dirty.	**“This disc is incompatible.”**	  Display for 5 seconds.

Error Code	Diagnosis contents	Description	Monitor Display	Automatic FL display
NO READ	Disc read error	*A disc is flawed or dirty. *A poor quality failed to start. *The track information could not be read.	**"Cannot read. Please check the disc."**	
HARD ERR	Drive error	The drive detected a hard error.	"**DVD drive** error."	Display for 5 seconds. 
SELF CHECK	Restoration operation	Since the power cord fell out during a power failure or operation, it is under restoration operation. *It will OK, if a display disappears automatically. If a display does not disappear, there is the possibility that defective Digital P.C.B. / RAM drive.	No display	
PLEASE WAIT	Unit is in termination process	Unit is in termination process now. "BYE" is displayed and power will be turned off. In case "Quick Start" of setup menu is ON, it is displayed in restoration operation for AC off.	No display	
UN-FORMAT	Unformatted disc error	You have inserted an unformatted DVD-RAM or DVD-RW that is unformatted or recorded on other equipment.	**Format:** This disc is not formatted properly. Format the disc in DISK MANAGEMENT?	
IR ERR	IR communication error	[IR ERR] is display when communication between Timer microprocessor and IR microprocessor fails.	No display	
No REC	Recording is impossible	[No REC] is displayed when recording is impossible due to the defect, dirt or wound of media.	No display	

8.1.2. SPECIAL MODES SETTING

Item		FL display	Key operation
Mode name	Description		Front Key
TEST Mode	*All the main unit´s parameters (include tuner) are initialized.	TM AV1	Press [VHS to DVD COPYING], [REC] and [OPEN/CLOSE] keys simultaneously for five seconds when power is off.
Rating password	The audiovisual level setting password is initialized to “Level 8”.	INIT	Open the tray, and press [REC] and [PLAY] simultaneously for 5 seconds.
Service Mode	Setting every kind of modes for servicing. *Details are described in “**Service Mode**”.	SERV	When the power is off, press [STOP], [OPEN/CLOSE] and [VHS to DVD COPYING] keys simultaneously for 5 seconds.
Forced disc eject	Removing a disc that cannot be ejected. The tray will open and unit will shift to P-off mode. *When Timer REC is ON or EXT-LINK is ON, execute " Forced disc eject " after releasing Timer REC or EXT-LINK. *This command is not effective during "Child lock" is ON. While Demonstration Lock is being set, this Forced disc eject function is not accepted. **If this command was executed while TIMER REC is being set, TIMER REC setting will turn to OFF.**	The display before execution leaves. ******	When the power is off, press [STOP] and [CH UP] keys simultaneously for 5 seconds.
Child lock/unlock	Set or release “Child Lock”.	X HOLD	Press [ENTER] and [RETURN] by remote controller simultaneously until [X-HOLD] is displayed.
NTSC/PAL system select	To switch PAL/NTSC altemately.	The display before execution leaves. ******	While the power is on (E-E mode), press [STOP] and [OPEN/CLOSE] simultaneously for 5 seconds.
Forced power-off	When the power button is not effective while power is ON, turn off the power forcibly. *When Timer REC is ON or EXT-LINK is ON, execute “Forced Power-off” after releasing Timer REC or EXT-LINK.	Display in P-off mode.	Press [Power] key over than 10 seconds.
Aging	Perform sequence of modes as * Aging Description shown below continually. **Caution:** **All programs in DVD-RAM disc will be deleted because Formatting is done once in Aging process.**	Display following the then mode.	When the power is ON, press [CH DOWN], [VHS to DVD COPYING] and [OPEN/CLOSE] simultaneously for over 5 seconds and less than 10 seconds. **NOTE1:** If Unit has not turned into Aging mode by operations shown above, execute TEST MODE once and re-execute operation shown above. (*All the main unit’s parameters include tuner are initialized by TEST mode.) **NOTE2:** If the unit has hung-up because of pressing keys for over 10 seconds, once turn off the power, and re-execute this command. *When releasing Aging mode, press [POWER] key.

Item		FL display	Key operation
Mode name	Description		Front Key
Aging Contents (Example):			



* XP mode ... repeat twice
SP mode ... repeat 4 times
LP mode ... repeat 8 times
EP mode ... repeat 12 times

Demonstration lock/unlock	Ejection of the disc is prohibited. The lock setting is effective until unlocking the tray and not released by “Main unit initialization” of service mode.	*When lock the tray. LOCK “LOCK” is displayed for 3 seconds.	When the power is on, press [STOP] and [POWER] keys simultaneously for 5 seconds.
		*When unlock the tray. UNLOCK “UNLOCK” is displayed for 3 seconds.	When the power is on, press [STOP] and [POWER] keys simultaneously for 5 seconds.
		*When press OPEN/CLOSE key while the tray being locked. LOCK Display “LOCK” for 3 seconds.	Press [OPEN/CLOSE] key while the tray being locked.
ATP re-execution	Re-execute ATP.	Display at ATP executing. ******	When the power is on (E-E mode), press [CH UP] and [CH DOWN] simultaneously for 5 seconds.
Progressive initialization	The progressive setting is initialized to Interlace.	The display before execution leaves. ******	When the power is on (E-E mode), press [STOP] and [VHS to DVD COPYING] simultaneously for 5 seconds.

8.1.3. (DVD) SERVICE MODES

Service mode setting: While the power is off, press [STOP], [VHS to DVD COPYING] and [OPEN/CLOSE] simultaneously for five seconds.

Item		FL display	Key operation
Mode name	Description		(Remote controller key)
Release Items	Item of Service Mode executing is cancelled.	SERV	Press [0] [0] or [Return] in service mode.
Error Code Display	Last Error Code of U/H/F held by Timer is displayed on FL. *Details are described in **"Self-Diagnosis Functions".**	♣□□ * ♣ shows U/H/F □□ shows number If any error history dose not exist, [F00] is displayed.	Press [0] [1] in service mode
ROM Version Display	1. Region code (displayed for 5 sec.) 2. Main firm version (displayed for 5 sec.) 3. Timer firm version (displayed for 5 sec.) 4. Drive firm version (displayed for 5 sec.) 5. ROM correction version (displayed for 5 sec.) 6. VHS Microprocessor version (displayed for 5 sec.) 7. VHS ROM Correction version (left displayed)	1. NO ** 2. ****** 3. ****** 4. **** 5. *** 6. **** 7. ** '' '' are version displays.	Press [0] [2] in service mode
White Picture Output	White picture is output as component Output from AV Decoder. *White picture (Saturation rate : 100%) *It is enable to switch Interlace/Progressive by "I/P switch: [1] [4]"	*Initial mode is "Interlace". WHIT I	Press [1] [1] in service mode.
		Switch Interlace/Progressive WHIT	Press [1] [4] in White Picture Output mode. *I/P are switched alternately.

Item		FL display	Key operation
Mode name	Description		(Remote controller key)
Magenta Picture Output	Magenta picture is output with Component Output from AV Decoder. *Magenta picture (Saturation rate: 100%) *It is enable to switch Interlace/Progressive by “I/P switch: [1] [4]”	*Initial mode is “Interlace”. MAGE 1	Press [1] [2] in service mode.
		Switch Interlace/Progressive MAGE	Press [1] [4] in Magenta Picture Output mode. *I/P are switched alternately.
RTSC Return in XP (A & V)	AV1 input signal is encoded (XP), decoded (XP) and output decoded signal to external without DISC recording and DISC playback.	Initial mode: EE2/ Interlace/ XP/ Audio 48kHz EE2	Press [1] [3] in service mode.
		Switch Interlace/Progressive EE2P48	Press [1] [4] in RTSC Return XP mode. *I/P are switched alternately.
		Audio 44.1 kHz/ 48 kHz Switch EE2P44	Press [2] [4] in RTSC Return XP mode. *48 kHz / 44.1 kHz are switched alternately.
I/P Switch	Switch Interlace and Progressive in EE mode. *Initial setting is “Interlace”. *This command is effective during executing “White Picture Output”, “Magenta Picture Output” and “RTSC Return in XP (A & V)” modes.	Initial mode is Interlace SERV P Switch Interlace/Progressive SERV 1	Press [1] [4] in I/P Switch mode. *I/P are switched alternately.
Audio Mute (XTMUTE)	Check whether mute is applied normally by the timer microprocessor.	T MUTE	Press [2] [1] in service mode.
Audio Mute (XDMUTE)	Check whether mute is applied normally by the Digital P.C.B..	D MUTE	Press [2] [2] in service mode.
Audio Pattern Output	The audio pattern stored in the internal memory is output (Lch: 1kHz/-18dB) (Rch: 400Hz/-18dB) *Audio sound clock switching operation of DAC can be confirmed by sub command [2] [4].	Initial mode (Audio 48kHz) AU 48	Press [2] [3] in service mode.
		Audio 44.1kHz/48kHz switching AU 44	Press [2] [4] in Audio Pattern Output mode. *48 kHz / 44.1 kHz are switched alternately.
Laser Used Time Indiction	Check laser used time (hours) of drive.	* ●(*****) is the used time display in hour. ●Laser used time of DVD/ CD in Playback/Recording mode is counted.	Press [4] [1] in service mode.
Delete the Laser Used Time	Laser used time stored in the memory of the unit is deleted.	CLR	Press [9] [5] in service mode.

<table>
<tr><th colspan="2">Item</th><th>FL display</th><th>Key operation</th></tr>
<tr><th>Mode name</th><th>Description</th><th></th><th>(Remote controller key)</th></tr>
<tr><td>RAM Drive Last Error</td><td>RAM Drive error code display.
*For details about the drive error code, refer to the Service Manual for the specific RAM Drive.</td><td>1. Error Number is displayed for 5 seconds.
NO **
2. Time when the error has occurred is displayed for 5 seconds.
DDHHMM
DD: Day
hh: Hour
mm: Minute
3. Last Drive Error (1/2) is displayed for 5 seconds.
******
4. Last Drive Error (2/2) is displayed for 5 seconds.
******
5. Error occurring Disc type is displayed for 5 seconds.
******
6. Disc Maker ID is displayed for 5 seconds.
******
7. Factor of Drive Error occurring is left displayed</td><td>Press [4] [2] in service mode.
When “INFO******” is being displayed, past 19 error histories can be displayed by pressing [0] [1] - [1] [9]

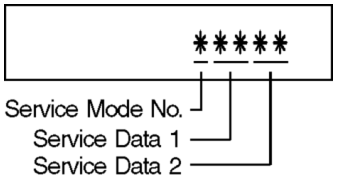
In case that the maker cannot be identified, display is black out.</td></tr>
<tr><td>Delete the Last Drive Error</td><td>Delete the Last Drive Error information stored on the DVD RAM-Drive.</td><td>CLR</td><td>Press [9] [6] in service mode.</td></tr>
<tr><td>Laser power confirmation</td><td>Drive state is judged based on difference between laser power value at shipping and present laser power value.</td><td>CHK *
* is judgment result
<table><tr><th>*</th><th>Power value difference</th><th>Evaluation</th></tr><tr><td>0</td><td>1mW or less</td><td>Very good</td></tr><tr><td>1</td><td>2mW or less</td><td>Good</td></tr><tr><td>2</td><td>3mW or less</td><td>Bad</td></tr><tr><td>3</td><td>4mW or more</td><td>Very bad</td></tr></table>If DVD-RAM disc in not inserted, [NO DISC] is displayed.
If power value study was filed, [ERROR] is displayed.</td><td>1. Insert DVD-RAM disc into RAM Drive in service mode. (Other media are assumed to be non-correspondence.)
2. Press [4] [4].</td></tr>
<tr><td>Turn on all FL/LEDs</td><td>All segments of FL and all LEDs are turned on.</td><td>All segments are turned on.</td><td>Press [5] [1] in service mode.</td></tr>
<tr><td>PB HIGH Signal Output</td><td>8 pin of AV 1 Jack (PB HIGH terminal) is High (approx. 11V DC).</td><td>PB HI</td><td>Press [5] [2] in service mode.</td></tr>
<tr><td>PB MIDDLE Signal Output</td><td>8 pin of AV 1 Jack (PB HIGH terminal) is Middle (approx. 5.5V DC)</td><td>PB MID</td><td>Press [5] [3] in service mode.</td></tr>
</table>

Item		FL display	Key operation
Mode name	Description		(Remote controller key)
Front connection inspection	Press all front keys and check the connection between Main P.C.B. and Front key Switches.	01 ** (1) (2) (1) Each time a key is pressed, segment turned on increases one by one. (2) Total umber of keys that have been pressed.	Press [5] [4] in service mode.
Production Date Display	Display the date when the unit was produced.	YYMMDD YY: Year MM: Month DD: Day	Press [6] [1] in service mode.
Display the accumlated working time	Display the accumulated unit´s working time.	****** (Indicating unit: Second)	Press [6] [4] in service mode.
Display the Error History	Display the Error History stored on the unit.	Display reason of error for 5 seconds. NO ** 01: Defect of Digital P.C.B. (AV DEC / MAIN CPU) 02: Defect of RAM Drive. 03: Defect of Disc. 04: Defect of Digital P.C.B. or Communication Error. 05: Defect of Digital P.C.B. (AV DEC / MAIN CPU) 06: Defect of HDD. Display the time when the error has occurred for 5 seconds. DDHHMM DD: Day hh: Hour mm: Minute Accumulated working time till occuring of the error is left displayed. ****** (Indicating unit: Second)	Press [6] [5] in service mode. Then press [0] [1] ~ [1] [9], the past 19 error histories are displayed.
Delete the Error History	Delete Error History information stored on the unit.	CLR	Press [9] [7] in service mode.
AV4(V)/AV1(RGB) I/O Setting	Set input to AV4 (V) and set output to AV1 (RGB) for I/O checking	PAL 01	Press [8] [0] in service mode.
AV2(Y/C)/AV1(V) I/O Setting	Set input to AV2 (Y/C) and set output to AV1 (V) for I/O checking	PAL 02	Press [8] [1] in service mode.

Item		FL display	Key operation
Mode name	Description		(Remote controller key)
AV2(V)/AV1(Y/C) I/O Setting	Set input to AV2 (V) and set output to AV1 (Y/C) for I/O checking	PAL 03	Press [8] [2] in service mode.
AV2(RGB)/AV1(V) I/O Setting	Set input to AV2 (RGB) and set output to AV1 (V) for I/O checking	PAL 04	Press [8] [3] in service mode.
P50(H) Output	Timer Microprocessor IC7504-76 output High signal for AV1-pin 10 passing through inverter (approx. 0V DC at AV1-pin 10).	When OK. P50HOK When NG. P50HNG	Press [8] [4] in service mode.
P50(L) Output	Timer Microprocessor IC7504-76 output Low signal for AV1-pin 10 passing through inverter (approx. 4.4V DC at AV1-pin 10).	When OK. P50LOK When NG. P50LNG	Press [8] [5] in service mode.
Tray OPEN/CLOSE Test	The RAM drive tray is opened and closed repeatedly.	****** "*" is number of open/close cycle times.	Press [9] [1] in service mode *When releasing this mode, press the [POWER] button of Remote Controller more than 10 seconds.
Error code initialization	Initialization of the last error code held by timer (Write in F00)	CLR	Press [9] [8] in service mode.
Initialize Service	Last Drive Error, Error history and Error Codes stored on the unit are initialized to factory setting.	CLR	Press [9] [9] in service mode.
Finishing service mode	Release Service Mode.	Display in STOP (E-E) mode. ******	Press power button on the front panel or Remote controller in service mode.

8.2. (VHS) SELF-DIAGNOSIS AND SPECIAL MODE SETTING

8.2.1. (VHS) SPECIAL MODES SETTING

Item		FL display	Key operation
Mode name	Description		Front Key
Tracking Center	Tape Tracking is adj usted to center FIX position.	No display.	During PLAYBACK, press [VHS CH UP] and [VHS CH DOWN] keys simultaneously.
VHS Service Mode	In order to make service easy, a part of inside information of a microprocessor is displayed on FIP. *Details are described in **"13.2. VHS Service Mode"**.		Press [STOP], and [EJECT] keys simultaneously for three seconds when power is off. Set Drive to VHS.
Releasing EXT LINK & Timer Program	Releasing Continuation EXT LINK & Continuation Timer Program	No display.	While in EXT LINK or Timer REC mode, press [VHS STOP] key for 3 seconds.
Eject	Ejecting Cassette Tape	No display.	While in other than Timer REC mode, press [STOP] key for 3 seconds or press [STOP] key of the Remote Controller for 3 seconds in VHS mode.

8.2.2. (VHS) SERVICE MODES

(Service Mode Setting)

1. When power is OFF, press [STOP] and [EJECT] keys simultaneously for 3 seconds to into Service Mode and set Drive to VHS.
2. In Service Mode, press [STOP] and [EJECT] keys simultaneously to add Service Number.

Service Mode Number	Contents	Contents of Indication on minute	Contents of Indication on second	Remarks
0	Indication for the inner data of IC6001	VHS mode (Real time)	Process number of the mechanism movement (Real time)	
1	Indication for the inner data of IC6001	Tape beginning and ending detection data (Real time)	Key code (Real time)	
		00: Both tape beginning and ending have not been detected 01: Tape ending is detecting now 02: Tape beginning is detecting now 03: Both tape beginning and ending are detecting now	Indicate the receiving code when the key of VCR or remote controller being operated.	
2	Indication for the inner data of IC6001	Mechanism position (Real time)	Ordering for the Motors (Real time)	The following functions are prohibited to operate the mechanism without cassette tape. ●Tape beginning and ending detection. ●Reel lock detection ●Tape detection and tape position detection Press the EJET key for over 3 seconds in this mode, and then the VCR is shifted into the special modes, such as PG Adjustment, Model Code Setting, and so on. The orders for the motors are asfollows.
		0L: EJECT position 02: DOWN position 03: RREW position 04: LOAD position 05: REV position 06: PLAY position 07: POFF position 08: STOP_R position 09: STOP_F position 0- : FF/REW position 0_ : Intermediate between each positions	0*, 2*: CYL off, CAP off 1*: CYL off, CAP on (fwd) 3*: CYL off, CAPon (rev) 8*, A*: CYL on, CAP off 9*: CYL on, CAPon (fwd) B*: CYL on, CAP on (rev) *0: Motor off *1:Loading *2: Unloading *3: Break (Load + Unload)	
3	Self-diagnosis history (1st)	1st history of error number	"- -" is displayed.	
4	Self-diagnosis history (2nd)	2nd history of error number	"- -" is displayed	
5	Self-diagnosis history (3rd)	3rd history of error number	"- -" is displayed	
6	Indication for the inner data of IC6001	Servo data (4 digits) (Real time)		

Service Mode Number	Contents	Contents of Indication on minute	Contents of Indication on second	Remarks
7	Manual mechanism operation	Mechanism position (Real time)	Ordering for the Motors	Press the following key; PLAY key: Loading STOP key: Unloading
		0L: EJECT position 02: DOWN position 03: RREW position 04: LOAD position 05: REV position 06: PLAY position 07: POFF position 08: STOP_R position 09: STOP_F position 0- : FF/REW position 0 _: Intermediate between each positions	0*, 2*: CYL off, CAP off 1*:CYL off, CAP on (fwd) 3*: CYL off, CAPon (rev) 8*, A*: CYL on, CAP off 9*: CYL on, CAPon (fwd) B*: CYL on, CAP on (rev) *0: Motor off *1:Loading *2: Unloading *3: Break (Load + Unload)	

8.2.3. (VHS) SELF-DIAGNOSIS FUNCTIONS

This model has a self-diagnosis. If the VHS section detects trouble during installation or during use, the power is automatically turned off or become power-save mode and it is memorized into the EEPROM (IC9705) as error code of two-digit number. Its memorized error code can be displayed in "second" display portion (the last 2 digits of the FIP) by placing the unit is Service Mode Number 2 when turning on the Service Information Display as for example "01" or "02" etc. as below. If a second error occurs, the most recent error will be memorized and can be displayed in Service Mode Number 2. It can be memorized until 3 self-diagnosis histories in maximum.

In order to erase the memorized error code, press STOP and EJECT buttons on the Front Panel simultaneously over 5 seconds during turning on Service Information Display mode.

8.2.3.1. MEMORY OF THE SELF-DIAGNOSIS HISTORY

***This is effective only in Service Mode 3, 4, 5.**

8.2.3.1.1. ERROR NUMBERS AT A GLANCE

Memory No. (Error Code)	Reason
01	The cylinder could not be started. (Error of the cylinder or the cylinder driver.)
02	The CAP FG could not be detected.
03	Mechanism lock during without the unloading and the cassette-up.
04	Mechanism lock during unloading
05	S-reel pulse cannot be detected during unloading. (Error of the S-reel circuit or the Capstan circuit)
06	Mechanism lock during the Cassette-up.
09	Communication error between VHS Microprocessor (IC6001) and Timer Microprocessor (IC9704).
15	S-reel pulse cannot be detected when a cassette tape is inserted. (Error of the S-reel circuit or the Capstan circuit)
16	Detection of the Cylinder lock during the constant rotation
17	Detection of S-reel lock during the constant tape running
18	Detection of T-reel lock during the constant tape running
2* Refer to following table	An error while the PG Automatic Adjustment
80	An exceptional ejection depends on a accidental error

Note:

2* is as follows.

20	NG1 in the PG Shifter Automatic Adjustment (The cylinder rotation is unstable during the automatic adjustment.)
21	NG2 in the PG Shifter Automatic Adjustment (The vertical sync signal is lacked while over 5 seconds on the alignment tape.)
22	NG3 in the PG Shifter Automatic Adjustment (The installing position of Heads to the cylinder is our of specification.
23	NG4 in the PG Shifter Automatic Adjustment (The servo is not locked to the cylinder for more than 10 sec.)

8.2.3.1.2. MEMORY FOR THE SELF-DIAGNOSIS HISTORY

3. The self-diagnosis result is memorized the state of the moment of detecting.

4. There are the histories from number 1 to number 3.

5. The latest error is memorized on history number 1, and then the old histories are shifted to the history number 2 and 3.

The error code memorized in the history number 2 and 3 is over-written by shift.

4. If the latest error is the same with the history number 1 (2nd-latest), it is not memorized.

(The same error code is not memorized in succession)

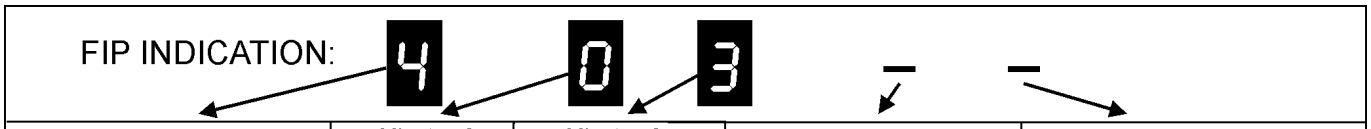
8.2.3.1.3. CLEAR FOR THE SELF-DIAGNOSIS HISTORY

1. Press STOP and EJECT buttons simultaneously over 5 seconds during turning on Service Information Display mode.

8.2.3.1.4. INDICATION OF THE SELF-DIAGNOSIS HISTORY

The self-diagnosis histories can be indicated on the FIP with Service Mode number 3 to 5.

The procedure of service mode setting and indication format are the same as usual.



Hour of one-digit	Minute of two-digit	Minute of one-digit	Second of two-digit	Second of one-digit
Service mode number	Error code		—	—
3	Error code of history 1 (the latest)		—	—
4	Error code of history 2 (2nd latest)		—	—
5	Error code of history 3 (3nd latest)		—	—

The Error code of history 1, 2 and 3 can be indicated by selecting the Service mode 3, 4 and 5.
In case of no error code in the memory, it is indicated as "00".

9 SERVICE FIXTURE AND TOOLS

Part Number	Description	Pcs	Compatibility
RFKZ03D01K	Lead Free Solder (0.3 mm / 100 g Reel)	1	Same as ES15
RFKZ06D01K	Lead Free Solder (O.6 mm / 100 g Reel)	1	Same as ES15
RFKZ010D01	Lead Free Solder (1.0 mm / 100 g Reel)	1	Same as ES15
RFKZ0316	Solder Remover (Lead free 10 W temperature Solder / 180 g)	1	Same as ES15
RFKZ0328	Flux	1	Same as ES15
RFKZ0329	Bottle of Flux	1	Same as ES15
JZS0484	Eject Pin	1	Same as ES15

Part Number	Description	Pcs	Compatibility
RFKZ0240	Extension Cable (Main P.C.B. - Power & Digital I/F P.C.B. / 19 pin)	1	Same as E75V
RFKZ0327	Extension Cable (Main P.C.B. - Power & Digital I/F P.C.B. / 15 pin)	2	New
RFKZ0365	Extension Cable (Power Digital I/F P.C.B. - Digital P.C.B. / 64 pin)	1	New
RFKZ0239	Extension Cable (to Front Jack P.C.B. and FL P.C.B. / 10 pin)	4	Same as E75V

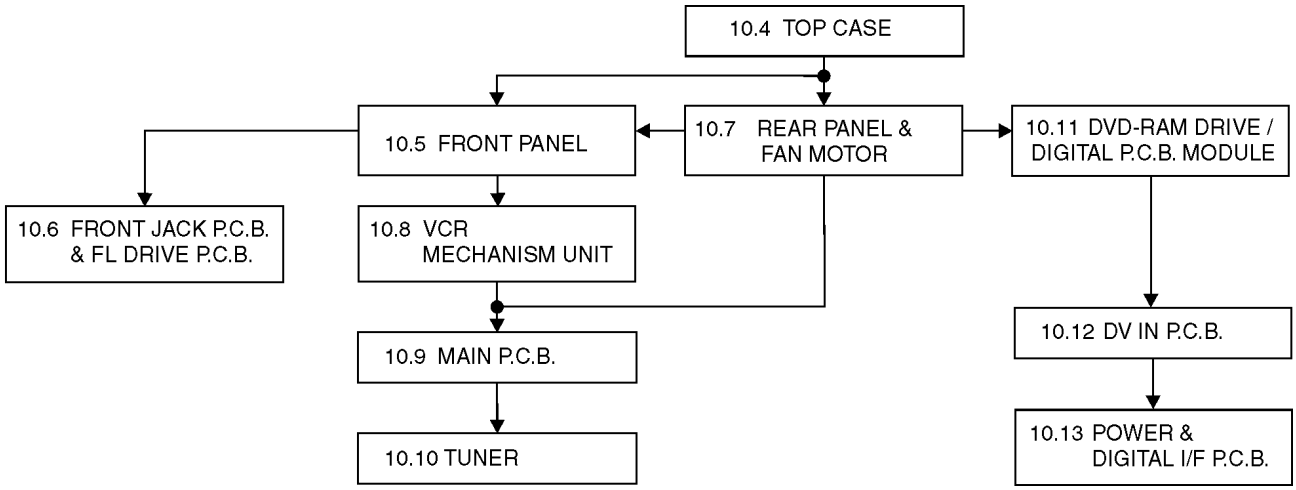
(for VHS)

Part Number	Description	Pcs	Compatibility
VFJ8125H3F	PAL VHS Alignment Tape	1	Same as E75V
VFK0329	Post Adjustment Screwdriver	1	Same as E75V
VFK0330	Fine Adjustment Gear Driver	1	Same as E75V

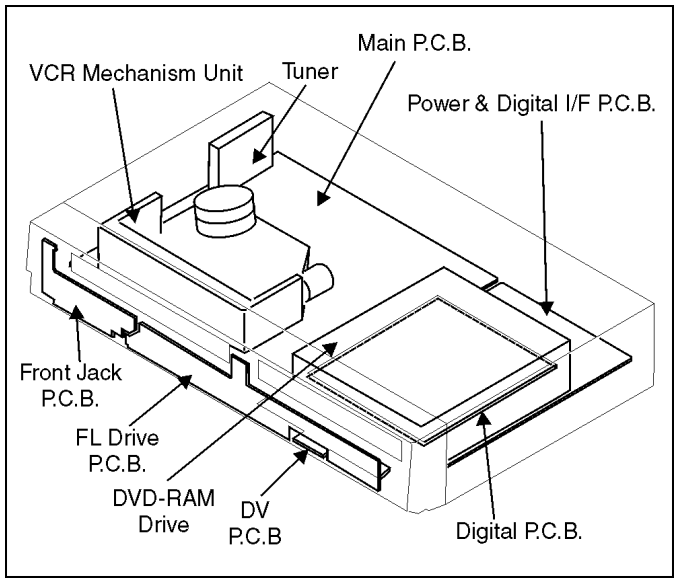
10 ASSEMBLING AND DISASSEMBLING

10.1. DISASSEMBLY FLOW CHART

The following chart is the procedure for disassembling the casing and inside parts for internal inspection when carrying out the servicing.
To assemble the unit, reverse the steps shown in the chart below.


10.4 TOP CASE
10.5 FRONT PANEL
10.7 REAR PANEL & FAN MOTOR
10.11 DVD-RAM DRIVE / DIGITAL P.C.B. MODULE
10.6 FRONT JACK P.C.B. & FL DRIVE P.C.B.
10.8 VCR MECHANISM UNIT
10.12 DV IN P.C.B.
10.9 MAIN P.C.B.
10.13 POWER & DIGITAL I/F P.C.B.
10.10 TUNER

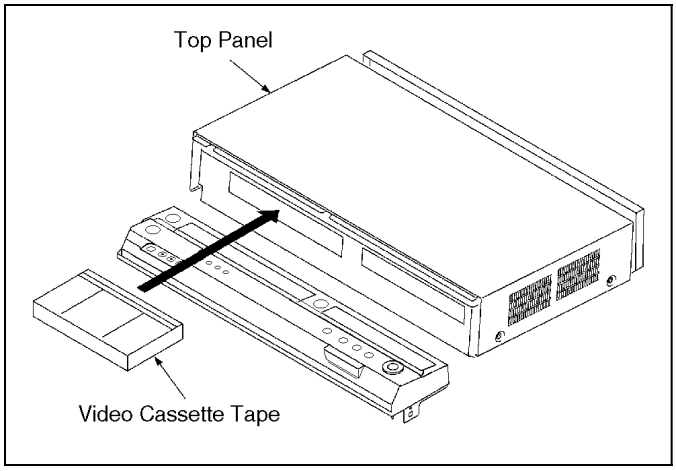
10.2. P.C.B. POSITIONS



10.3. CAUTION WHILE INSERTING CASSETTE TAPE WHEN DISASSEMBLING THE UNIT

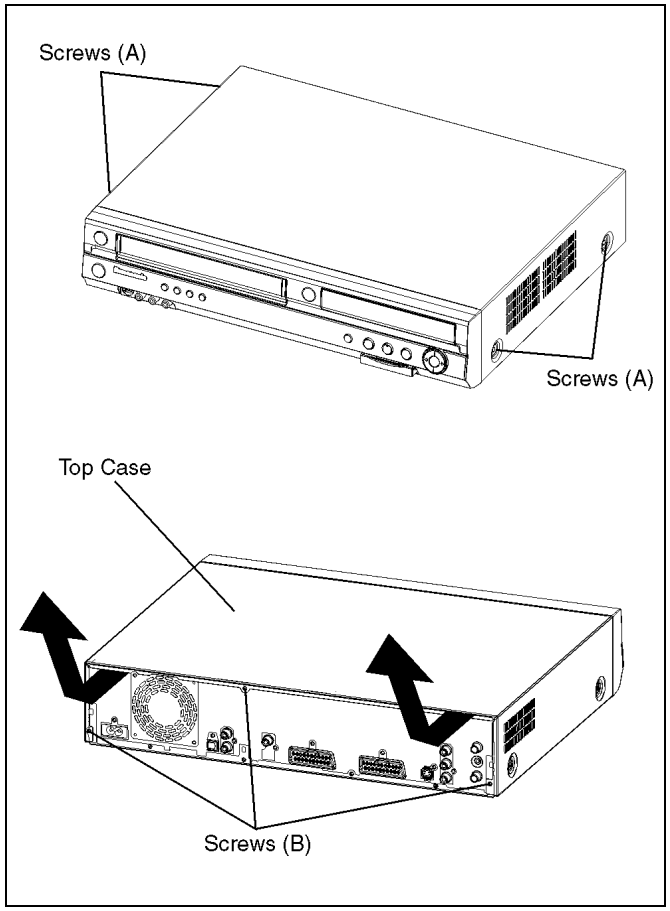
NOTE:

Video Cassette might not enter when a strong lighting is applied to VHS Mechanism when Video Cassette is inserted. Please weaken the lighting or cover with the top panel etc.



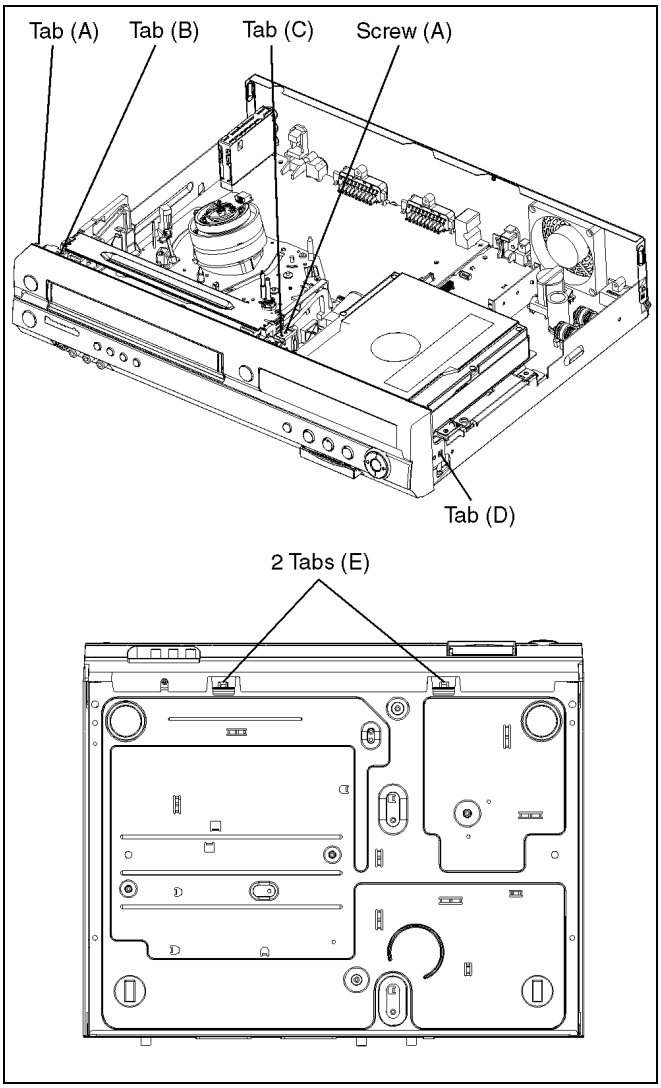
10.4. TOP CASE

1. Remove the 4 screws (A) and 3 screws (B).
2. Slide the Top Case for rear direction slightly, and open the both ends at rear side of the Top Case a little and lift up the Top Case for the direction of the arrows.



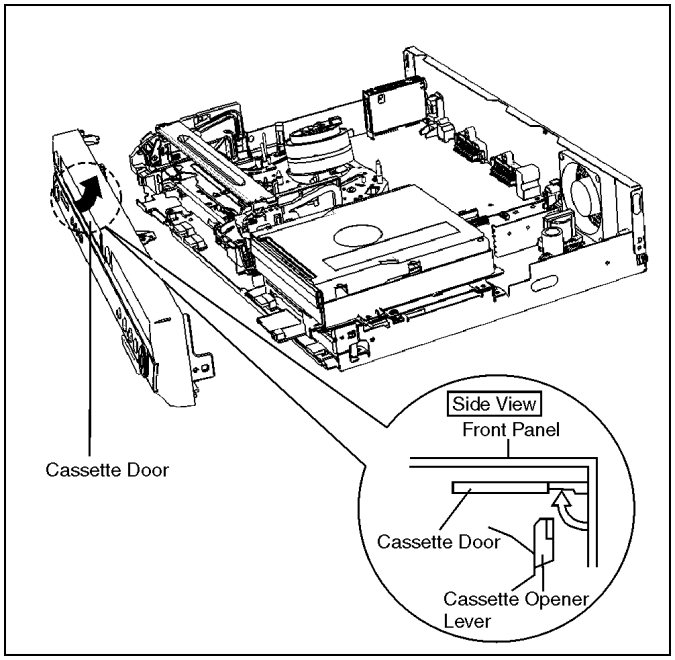
10.5. FRONT PANEL

1. Remove one screw (A).
2. Unlock tab (A) and tab (B) simultaneously.
3. Unlock tab (C) and tab (D) simultaneously.
4. Unlock 2 tabs (E) respectively and pull out Front Panel with connector slightly.



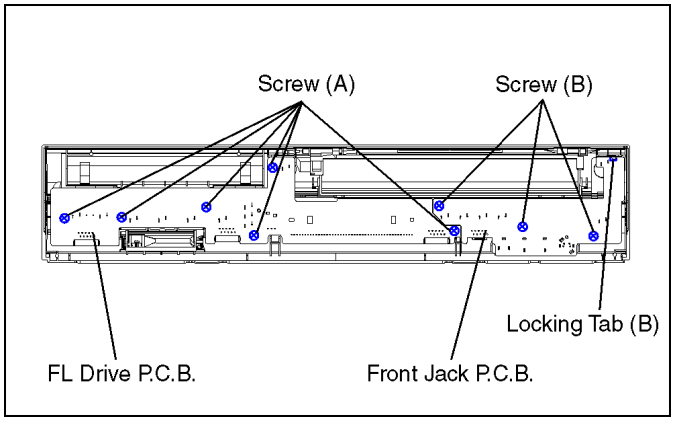
Note:

When attaching Front Panel, in order to hook Cassette Door Opener Lever to Cassette Door, push up cassette door in the direction of arrow and insert a front panel.



10.6. FRONT JACK P.C.B. & FL DRIVE P.C.B.

1. Remove one 6 screws (A) to remove FL Drive P.C.B. .
2. Remove 3 screws (B) and unlock the Locking Tab (B) to remove Front Jack P.C.B. .

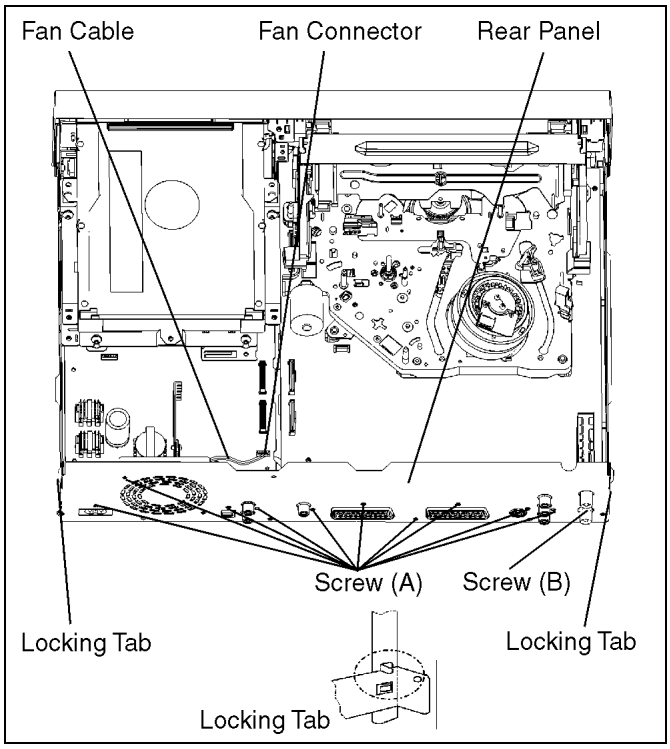


10.7. REAR PANEL & FAN MOTOR

1. Remove 10 Screws (A), Screw (B) and Fan Connector.
2. Unlock 2 Locking Tabs to remove Rear Panel with Fan Motor.
3. Attention when inserting Rear Panel:

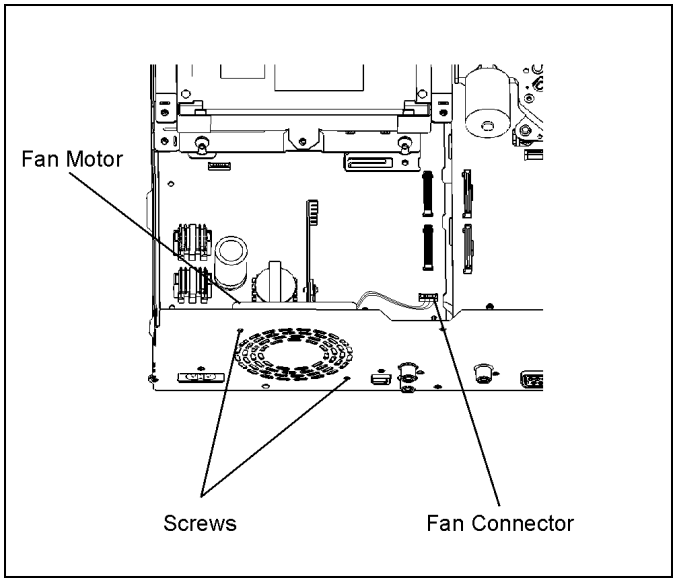
   Don't shut the Fan Cable between Rear Panel and Chassis.

   Check that the Locking Tabs on both sides on the Rear Panel snap into the holes of the Chassis.



10.7.1. ONLY FAN MOTOR

1. Remove 2 Screws and Fan Connector to remove Fan Motor.

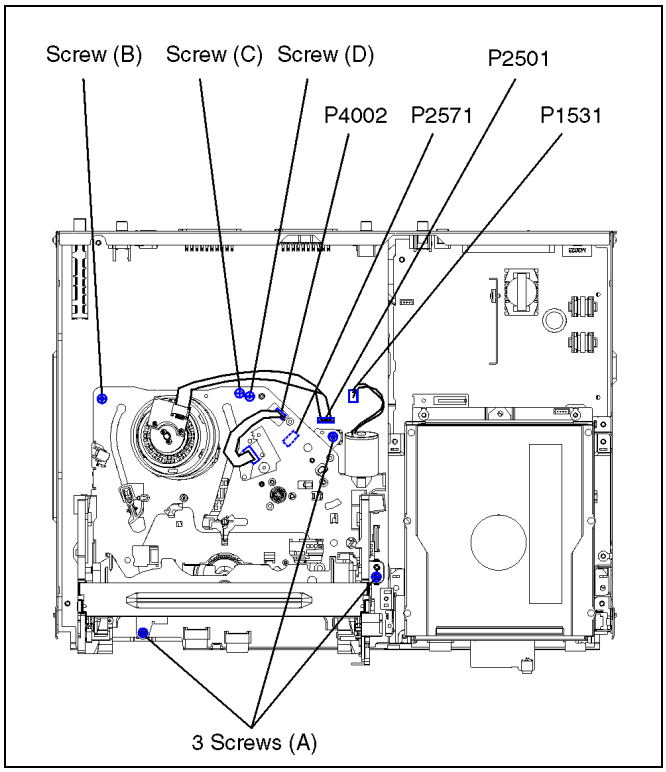


10.8. VCR MECHANISM UNIT

1. Disconnect 3 Connectors (P1531, P2501 and P4002).
2. Remove 3 black Screws (A), Screw (B), Screw (C) and Screw D).
3. Lift up VCR Mechanism Unit perpendicularly so to disconnect Connectors (P2571 and P3001).

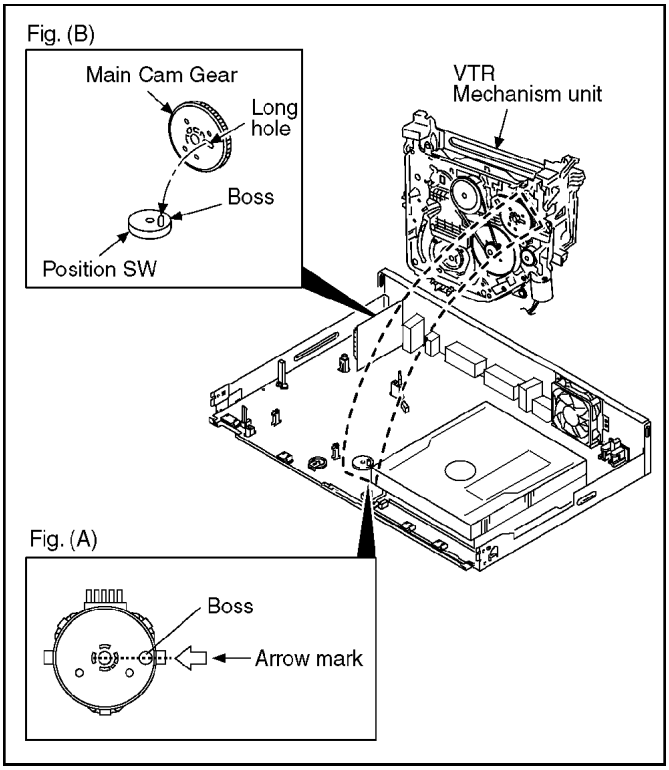
Note:

When you lift up VCR Mechanism Unit, because connections of P2501 and P3001 are tight, pay attention to that.



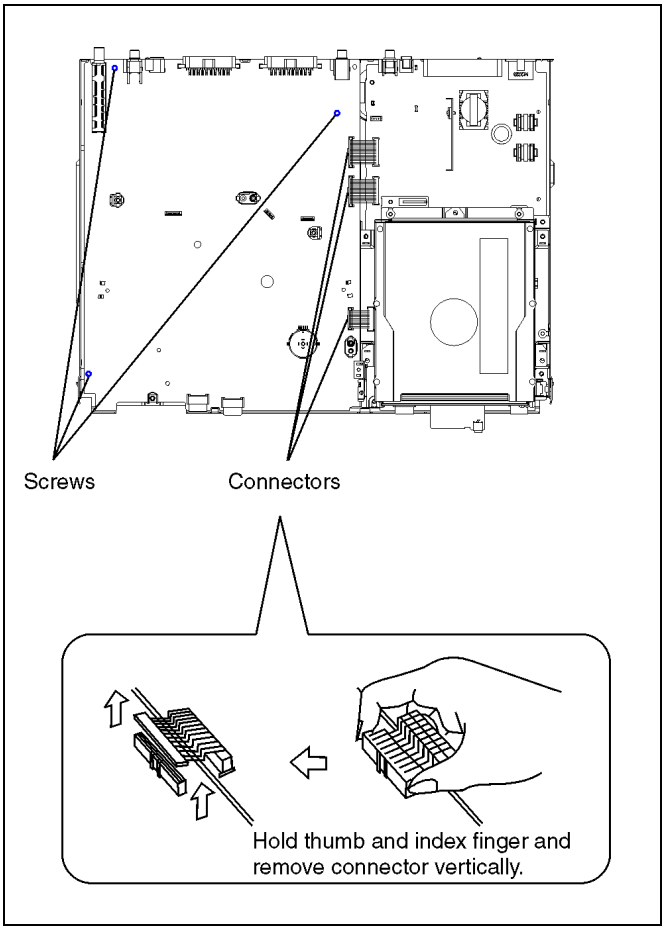
10.8.1. CAUTION FOR ATTACHING VCR MECHANISM UNIT

1. Because Position SW should be set to "Eject Position", refer to fig.(A) and set the position switch so that the boss and arrow mark come on a straight line.
2. Attach VCR Mechanism Unit so that Boss of Position SW is put into long hole of Main Cam Gear, refer to Fig. (B).



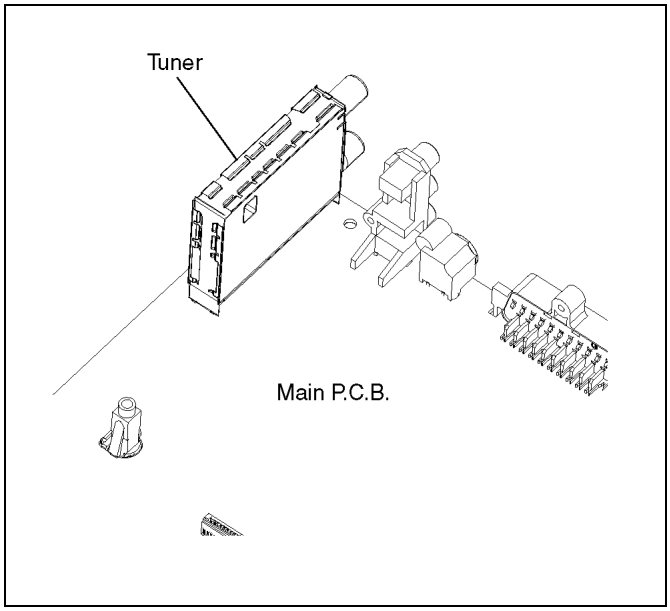
10.9. MAIN P.C.B.

1. Disconnect 3 Connectors.
2. Remove 3 Screws and remove Main P.C.B. .



10.10. TUNER

1. Remove the solders.
2. Pull out the Tuner from Main P.C.B. .



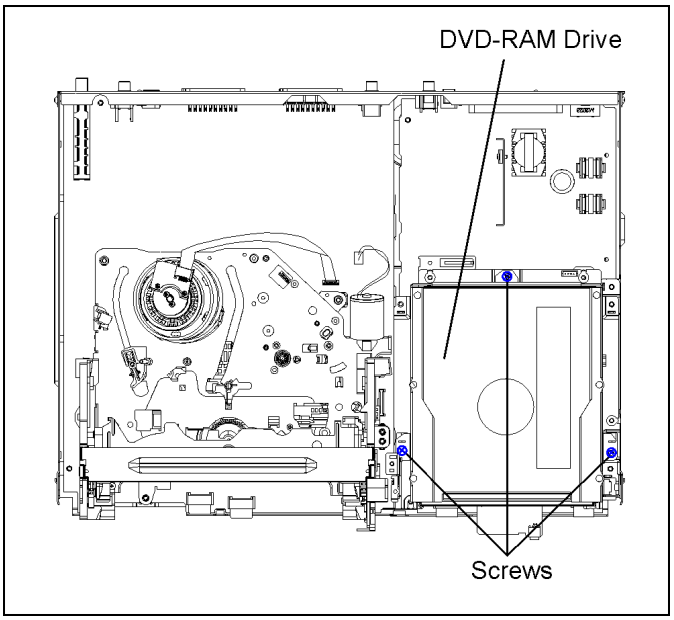
10.11. DVD-RAM DRIVE / DIGITAL P.C.B. MODULE

CAUTION:

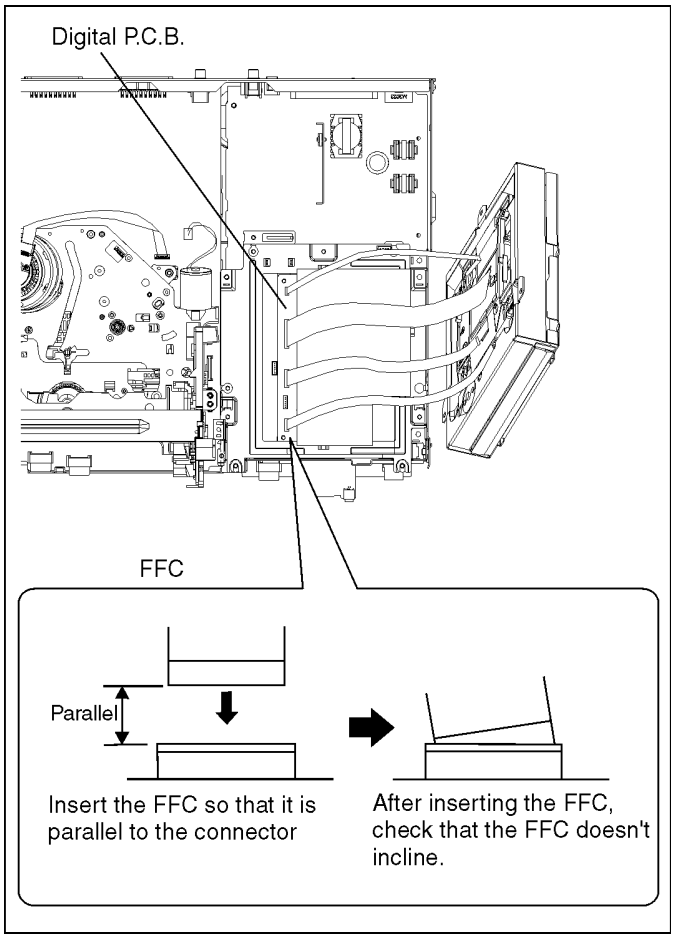
The DVD-RAM Drive and the Digital P.C.B. have to be replaced together as one Module.

If the Module is changed the DVD-RAM Drive has to be re-aligned because the aligment data for the DVD-RAM Drive is stored in the Digital P.C.B. .

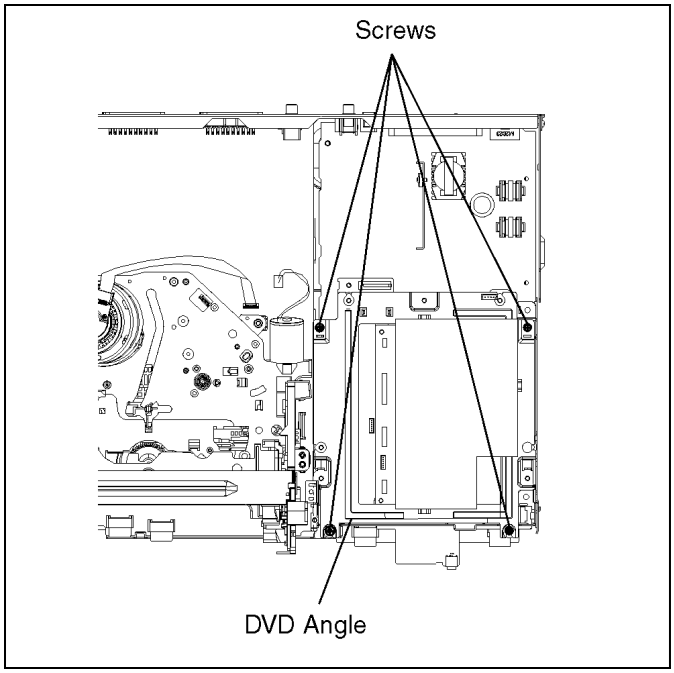
1. Remove 3 Screws.
2. Lift up DVD-RAM Drive slightly.



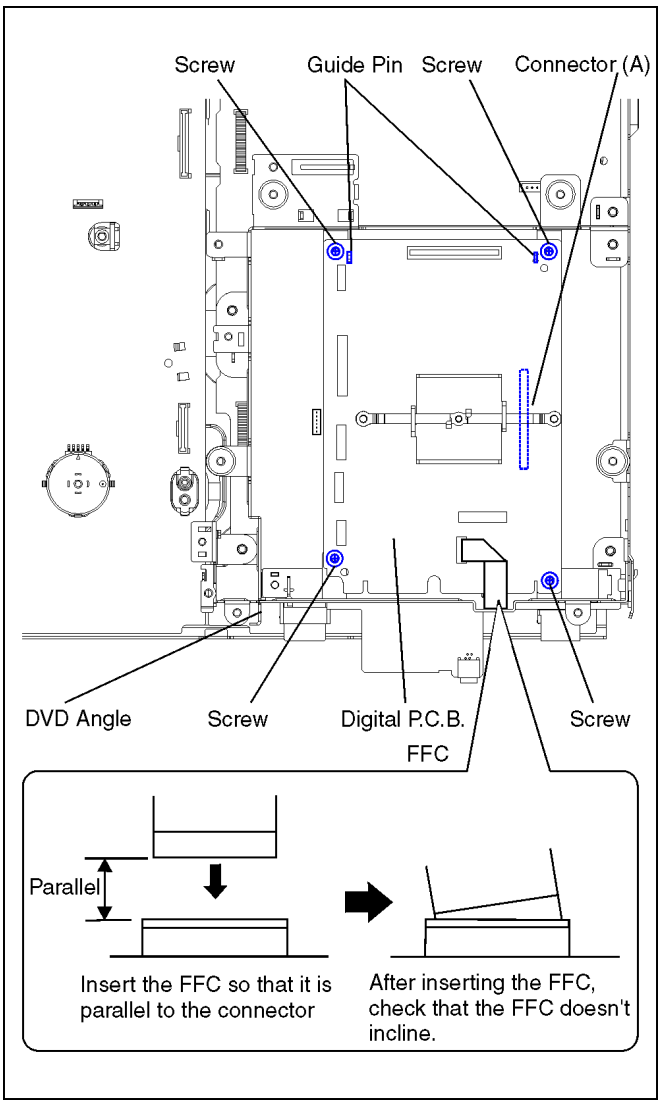
3. Disconnect FFC from Digital P.C.B. .


Digital P.C.B.
FFC
Parallel
Insert the FFC so that it is parallel to the connector
After inserting the FFC, check that the FFC doesn't incline.

4. Remove 4 Screws and DVD Angle.



5. Disconnect FFC.
6. Remove 4 Screws from Digital P.C.B.
7. Pay attention while pulling out Digital P.C.B. to disconnect Connector (A).



CAUTION:

When replacing the Module, pay attention to inserting FFC, and be careful to do not touch surface of CSP ICs.

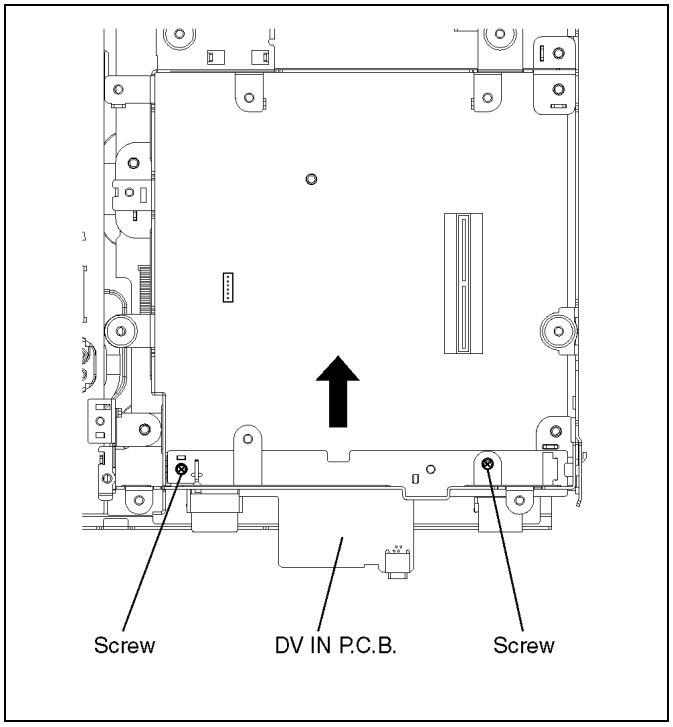
If you have touched surface of CSP IC, clean up with alcohol and so on to prevent oxidation.

NOTE:

When inserting Digital P.C.B. confirm correct position of Guide Pins.

10.12. DV IN P.C.B.

1. Remove 2 Screws.
2. Pull out the DV IN P.C.B. backwards.

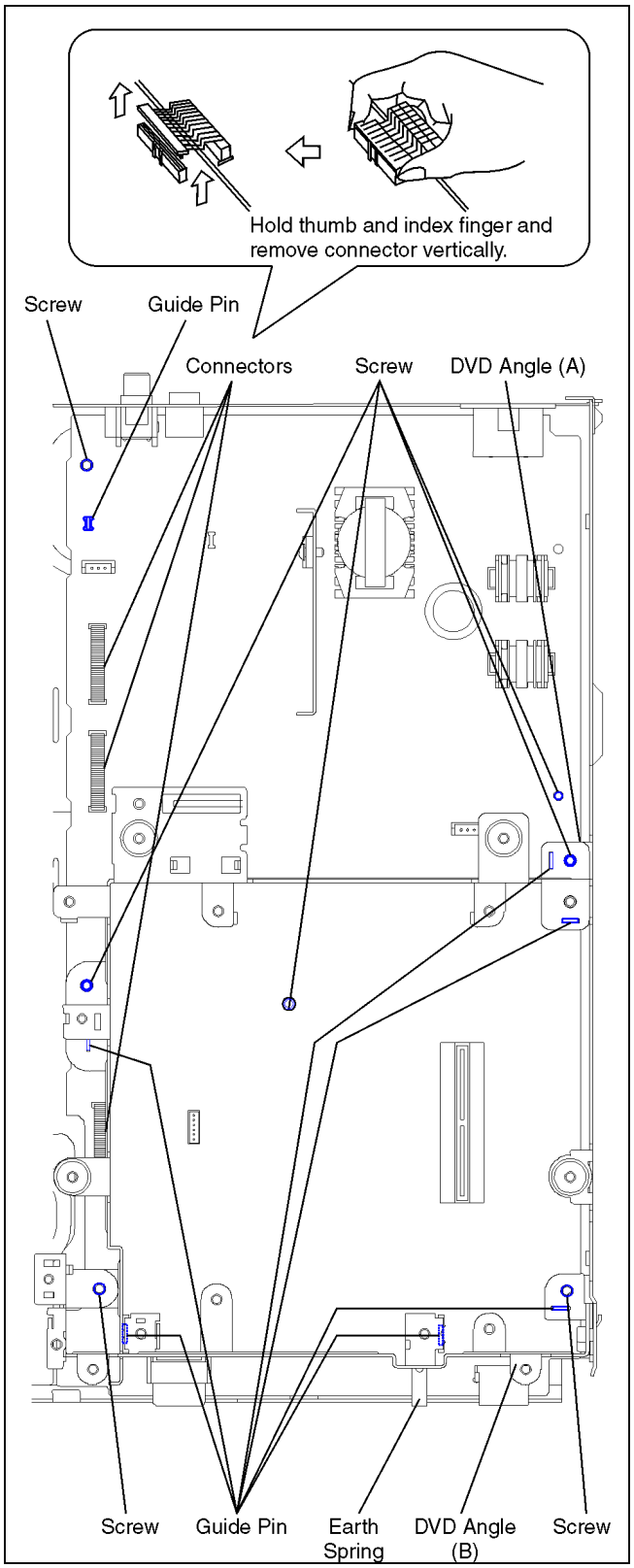


10.13. POWER & DIGITAL I/F P.C.B.

1. Remove Rear Panel and disconnect 3 Connectors.
2. Remove the 6 Screws.
3. Remove DVD Angle (A) and DVD Angle (B).
4. Remove Power & Digital I/F P.C.B.

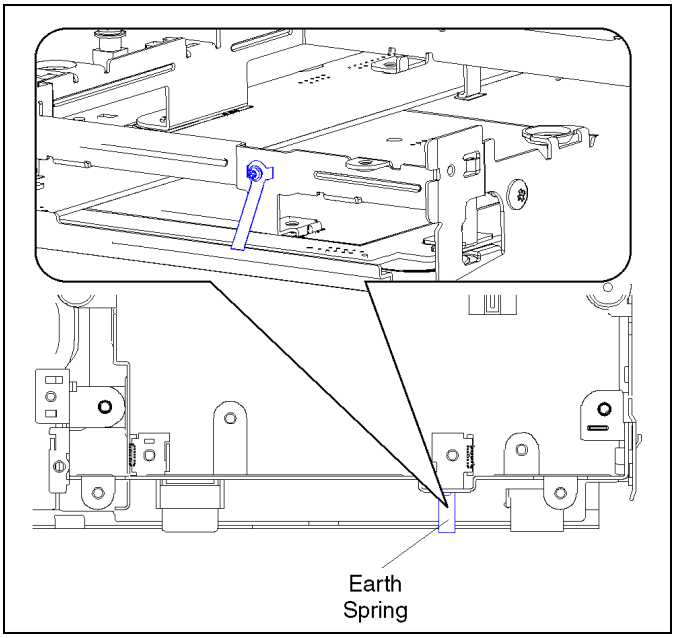
Note:

When inserting P.C.B. confirm correct positions of Guide Pins.



Caution:

The earth springs has to contact the Metalchassis.



11 MEASUREMENTS AND ADJUSTMENTS

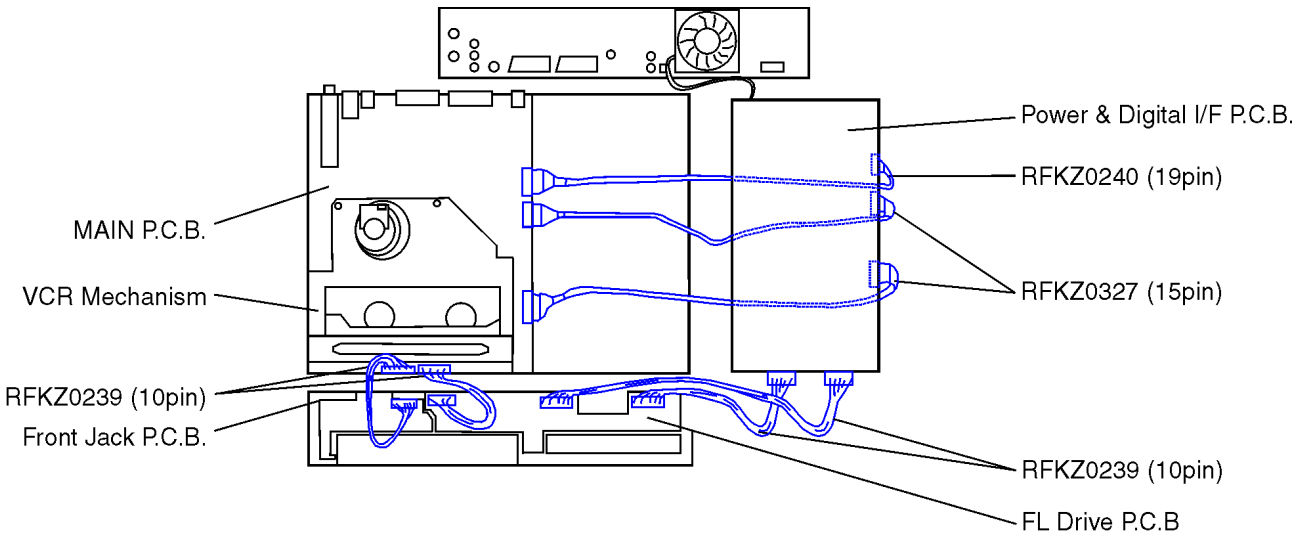
11.1. SERVICE POSITIONS

11.1.1. CHECKING AND REPAIRING OF POWER & DIGITAL I/F P.C.B.

CAUTION:

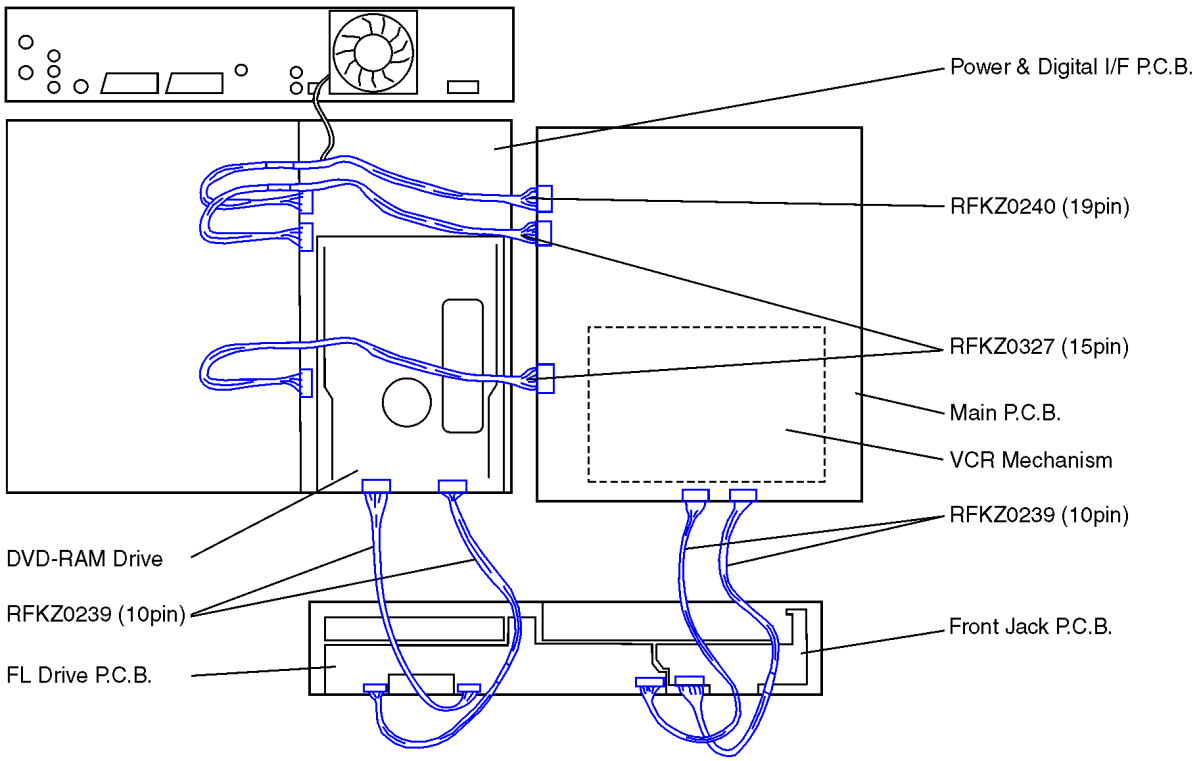
Before repairing of Power & Digital I/F P.C.B. read and observe “CAUTION FOR DIVX” (NEW FEATURE) first.

1. Top Case
   - Remove 4 Screws (A) on side and 3 Screws (B) on rear side.
   - Remove Top Case.
2. Front Panel
   - Remove one Screw (A) on center.
   - Unlock 2 Locking Tabs (A), (D) on Front Panel side and 2 Locking Tabs (B), (C) on Front Panel topside.
   - Unlock 2 Locking Tabs (E) on Front Panel bottom side and remove Front Panel.
3. Rear Panel with Fan Motor
   - Remove 10 Screws (A) and (B) on Rear Panel.
   - Unlock 2 Locking Tabs on the sides and remove Rear Panel with Fan Motor.
4. Digital P.C.B.
   - Remove 4 Screws and DVD Angle.
   - Disconnect FFC and 4 Screws from Digital P.C.B.
5. DV P.C.B.
   - Remove 2 Screws.
   - Pull out the DV P.C.B. backwards.
6. Power & Digital I/F P.C.B.
   - Disconnect 3 Connectors.
   - Remove 4 Screws from DVD Angle (A) and DVD Angle (B).
   - Remove 2 Screws from P.C.B. .
   - Remove DVD Angle (A) and DVD Angle (B).
   - Lift up Power & Digital I/F P.C.B., put it upside-down.
   - Connect Extension Cables:
     – between Main P.C.B. and Power Digital I/F P.C.B. : RFKZ0327 (2x) and RFKZ0240
     – between Main P.C.B. and Front Jack P.C.B.: RFKZ0239
     – between Main P.C.B. and FL Drive P.C.B.: RFKZ0239
     – between Power & Digital I/F P.C.B. and FL Drive P.C.B.: RFKZ0239 (2x)



11.1.2. CHECKING AND REPAIRING OF MAIN P.C.B.

1. Top Case
   - Remove 4 Screws (A) on side and 3 Screws (B) on rear side and remove the Top Case.
2. Front Panel
   - Remove on Screw (A) on center.
   - Unlock 2 Locking Tabs (A), (D) on Front Panel side and unlock 2 Locking Tabs (B), (C) on Front Panel topside.
   - Unlock 3 Locking Tabs (E) on Front Panel bottom side and remove Front Panel.
3. Rear Panel with Fan Motor
   - Remove 10 Screws (A) and (B) on Rear Panel.
   - Unlock 2 Locking Tabs on the sides and remove Rear Panel with Fan Motor.
4. VCR Mechanism Unit
   - Disconnect 3 Connectors and remove 3 black Screws (A) and 3 Screws (B), (C), (D).
   - Lift up VCR Mechanism Unit to remove it.
5. Main P.C.B.
   - Disconnect 3 Connectors.
   - Remove 3 Screws and remove Main P.C.B.
   - Attach VTR Mechanism Unit on to Main P.C.B.
   - Tighten Screw (C) with Earth Wire and tighten Screw (D).
   - Insert Connectors and 2 FFCs.
   - Hold Main P.C.B. with VTR Mechanism, put it upside-down.
   - Connect Extension Cables:
     – between Main P.C.B. and Power Digital I/F P.C.B.: RFKZ0327 (2x) and RFKZ0240
     – between Main P.C.B. and Front Jack P.C.B.: RFKZ0239
     – between Main P.C.B. and FL Drive P.C.B.: RFKZ0239
     – between Power & Digital I/F P.C.B. and FL Drive P.C.B.: RFKZ0239 (2x)



11.1.3. CHECKING AND REPLACING OF DVD-RAM DRIVE / DIGITAL P.C.B. MODULE

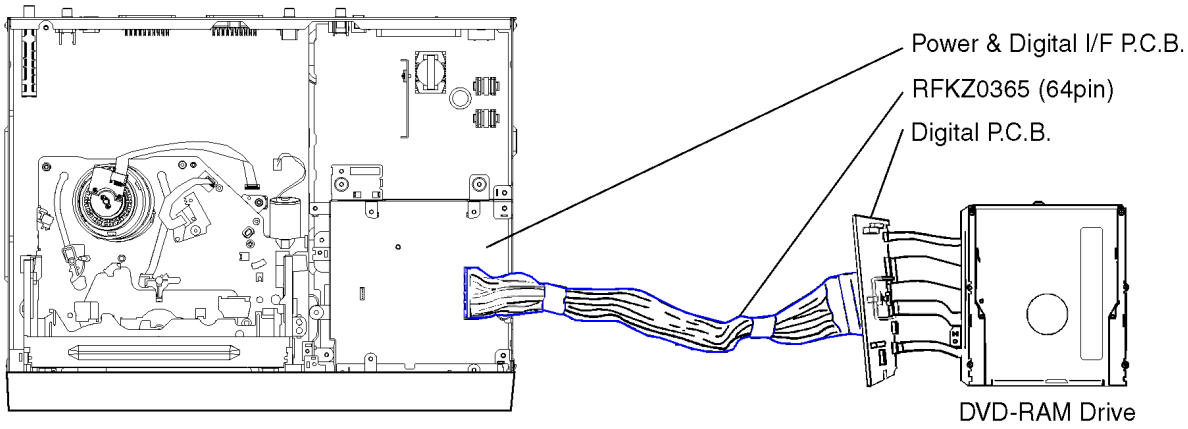
1. Top Case
   - Remove 4 Screws (A) on side and 3 Screws (B) on rear side.
   - Remove Top Case.
2. Front Panel
   - Remove one Screws (A) on center.
   - Unlock 2 Locking Tabs (A), (D) on Front Panel side and 2 Locking Tabs (B), (C) on Front Panel topside.
   - Unlock 2 Locking Tabs (E) on Front Panel bottom side and remove Front Panel.
3. DVD-RAM Drive / Digital P.C.B. Module
   - Remove the Screw.
   - Lift up and hold the DVD-RAM Drive slightly.
   - Remove 4 screws from Digital P.C.B. (pay attention while pulling out Digital P.C.B. to disconnect Connector).
   - Remove the Digital P.C.B. together with the DVD-RAM Drive and put it beside chassis.
   - Attach the Front Panel back to the Chassis.
   - Connect Extension Cables (Red Wire = Pin 1):
     – between Power & Digital I/F P.C.B. and Digital P.C.B. with RFKZ0365

CAUTION 1:

Before replacing DVD-RAM Drive / Digital P.C.B. Module read and abserve "CAUTION FOR DIVX" (NEW FEATURE) first.

CAUTION 2:

The DVD-RAM Drive and the Digital P.C.B. have to be replaced together as one Module. If the Module is changed the DVD-RAM Drive has to be re-aligned because the aligment data for the DVD-RAM Drive is stored in the Digital P.C.B. .



11.2. CAUTION FOR REPLACING PARTS

11.2.1. NOTICE AFTER REPLACING DVD-RAM/DIGITAL P.C.B. MODULE

TM AV1 is displayed after replacing DVD-RAM/Digital P.C.B. Module. Power-off and start-up again.

11.2.2. NOTICE FOR REPLACING PARTS OF VHS MECHANISM

11.2.2.1. REGARDING CHANGE OF PARTS OF VHS MECHANISM

The following parts are not compatible with past R4 Mechanism. Use parts of exclusive use.

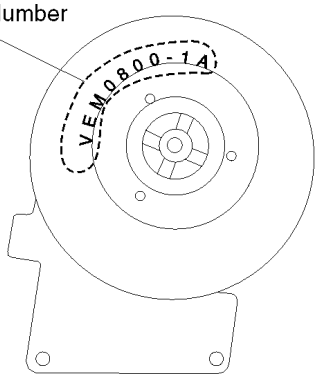
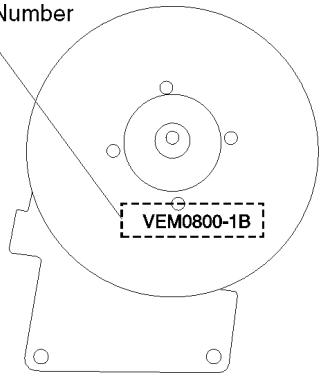
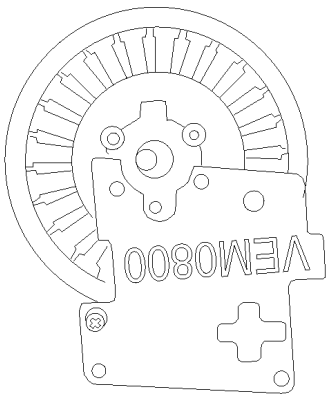
Ref. No.	Part Name	Part Number		Pcs	
		Current	Previous		
101	RDD CYLINDER ASSʏY	VEG1699KIT	VEG1648T/VEG1648-DT	1	*1
101-1	FPC HOLDER	VMD5464	VMD4983	1	
102	CAPSTAN MOTOR	VEM0800T	VEM0750T	1	
105	INTERMEDIATE GEAR	VDG1686	VDG1510	1	
106	MAIN CAM GEAR	VDG1685	VDG1511	1	
114	OPENER PIECE	VMD5466	VMD4252	1	
116	MAIN LEVER	VML3934	VML3624	1	
117	PINCH CHARGE ARM	VML3933	VML3626	1	
122	AC HEAD ASSʏY	L1AE00000044	L1AE00000036	1	
130	T BRAKE ARM	VXL3343	VXL3113	1	
135	SIDE PLATE L	VMD5468	VMD4255	1	
136	SIDE PLATE R	VMD5469	VMD4254	1	
137	CASSETTE HOLDER UNIT	VXA8265	VXA7110	1	
139	SECTOR GEAR	VXA8323	VXA7311	1	
*1: Part Number off RDD CYLINDER ASSʏY is different depending on the model.					

Capstan Motor (VEM0800T) used for current R4 Mechanism is not compatible with
Capstan Motor (VEM075oT) of previous R4 Mechanism.

Therefore, confirm part number by Service Manual of individual models and use part of exclusive use.

11.2.2.2. NOTICE FOR REPLACING CAPSTAN MOTOR

VEM0800-1A is printed on capstan motor of replacement part. VEM0800-1B is printed on capstan motor of product.
Thought printed part numbers differ between product and replacement part, **VEM0800-1A and VEM800-1B have compatibility.**

Replacement Part **"VEM0800-1A"** or **"VEM0800-1B"**	Product **"VEM0800-1B"**
Bottom Part-Number 	Bottom Part-Number 
Top 	Top 

11.2.2.3. ITEMS THAT SHOULD BE DONE AFTER REPLACING PARTS

✓: Necessary — : Unnecessary

	Reset IC6001 *** Note 1**	Reset IC9704 *** Note 1**	Obtain and register a new registration code *** Note 2**	PG Shifter Automatic Adjustment *** Note 3**	X-VALUE & LINEARITY (P2 and P3 Posts) Adjustment *** Note 4**
DD Cylinder	–	–	–	✓	✓
Main P.C.B.	✓	–	–	–	–
IC6001	✓	–	–	–	–
IC9704	–	✓	–	–	–
Power and Digital I/F P.C.B.	–	✓	✓	✓	–
IC9705 (EEPROM)	–	–	✓	✓	–

*** Note 1:**

Resetting object	Condition of power	Short Terminal
IC6001	POWER ON	TL6004 (Reset_L) and TL6002 (GND)
IC9704	POWER ON	IC9706-4 (Reset_L) and GND

*** Note 2:**

Please will always pass the customer “Warning for Customers Who Use the DivX Video-on-Demand content.” with the product and get it when you unavoidably exchange EEPROM or P.C.B. including EEPROM (When the product is exchanged, it is the same.).

You must use print attached to service part (EEPROM or P.C.B. including EEPROM) or must use copy of print below as “Warning for Customers who use the DivX Video-on-Demand content.”Information needed without fail for the customer for whom it is used continuing DivX Video-on-Demand Service to “Manual for the customer” is recorded.

Appendix:* Parts that memorize user’s information are only EEPROM.* The registration of Registration Code is possible for half a year up to 6 recorders up to 10 recorders a year. Replacement of EEPROM or P.C.B. including EEPROM spends one of this.

Registration Code is memorized in EEPROM (RFKxxxxxx).
Model without VHS: on Main P.C.B.Model with VHS: on Digital I/F P.C.B. (Power & DVD I/F/P.C.B.)If exchange above P.C.B. or EEPROM, new registration Code differ from previous Registration Code will be generated.In this case if your customer uses DivX Video-on-Demand service, he/she will no longer be able to play any content that he/she purchased under that same registration code.Therefore your customer will need to obtain and register the new registration code.

*Copy this page and cut on the dotted line and give the lower half to your customer.

Warning for Customers who use the DivX Video-on-Demand content.

1. The registration code has been changed for the repair of the product or the product exchange.
2. Obtain and register a new registration code, otherwise you will no longer be able to play DivX Video-on-Demand content.
3. Follow the procedure on the DivX Video-on-Demand web site to register at
   http://vod.divx.com/
   * If you do not use the DivX Video-on-Demand content, please ignore this warning.

*** Note 3:**

PG Shifter Automatic Adjustment Procedure

PROCEDURE			F.I.P. DISPLAY
Turn on the Service Mode 1. Set Drive Select to VHS and press the [STOP] and [EJECT] key simultaneously for more than 3 seconds.			00000
Activate the Service Mode 2 (Auto tracking will be turned off). 2. Pressing the [STOP] and [EJECT] key simultaneously twice.			20000
Put it in PG adjustment mode. 3. Press the [EJECT] key for more than 3 seconds.			2 00
Set in adjustment No. 1. 4. Press the [CH UP] key once.			2 100
Insert the aligment cassette tape (VFM8125H3F) 5. The PG Shifter Adjustment starts automatically.			2 100
Result	Success	Cassette tape is ejected automatically.	2 100
	Error	NG1 in the PG Shifter Automatic Adjustment (The cylinder rotation is unstable during the automatic adjustment.)	F20
		NG2 in the PG Shifter Automatic Adjustment (The vertical sync signal is lacked while over 5 seconds on the alignment tape.)	F21
		NG3 in PG Shifter Automatic Adjustment (The installing position of Heads to the cylinder is out of specification.	F22
		NG4 in the PG Shifter Automatic Adjustment (The servo is not locked to the cylinder for more than 10 sec.)	F23
Exit from Service Mode. 6. Press STOP and EJECT keys simultaneously in 6 times. * Then the FIP becomes normal indication.			10:00 (Normal Indication)

*** Note 4:**

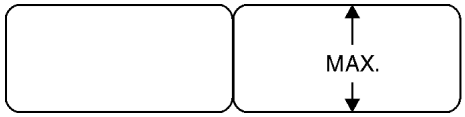
X-VALUE & LINEARITY (P2 and P3 Posts) Adjustment Procedure

1. Set the Auto Tracking to off.
   a. Set Drive Select to VHS and press the [STOP] and [EJECT] keys simultaneously for more than 3 seconds to enter Service Mode.
   b. Press [STOP] and [EJECT] keys simultaneously twice to activate Service Mode 2 and then Auto-Tracking is turned off.
2. Perform the X-VALUE ADJUSTMENT

X-VALUE ADJUSTMENT

1. After turning off the Auto tracking, playback the alignment Tape and press [VHS CH UP] and [VHS CH DOWN] keys simultaneously to adjustment the tracking to FIX value.
2. Adjust A/C Head Base so that the envelope becomes maximum level. (It is described on **"5-2. Tape Interchangeability Adjustment"** in **"R4 Mechanism"** that is separated volume.)

Alignment Tape	VFM8125H3F
Test Point of Playback Envelope	TW3001 (or TW4502)

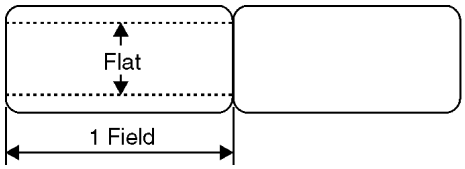


Playback Envelope

LINEARITY ADJUSTMENT

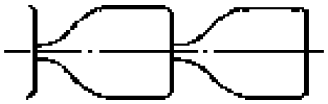
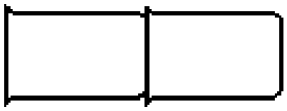
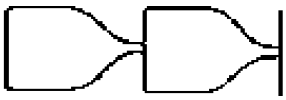
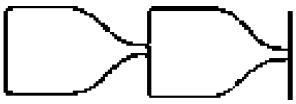
1. After turning off the Auto tracking, playback the alignment Tape and press [VHS CH UP] and [VHS CH DOWN] keys simultaneously to adjust the tracking to FIX value.
2. Adjust the LINEARITY so that the envelope is flat when moving tracking to (+) and (-) directions.

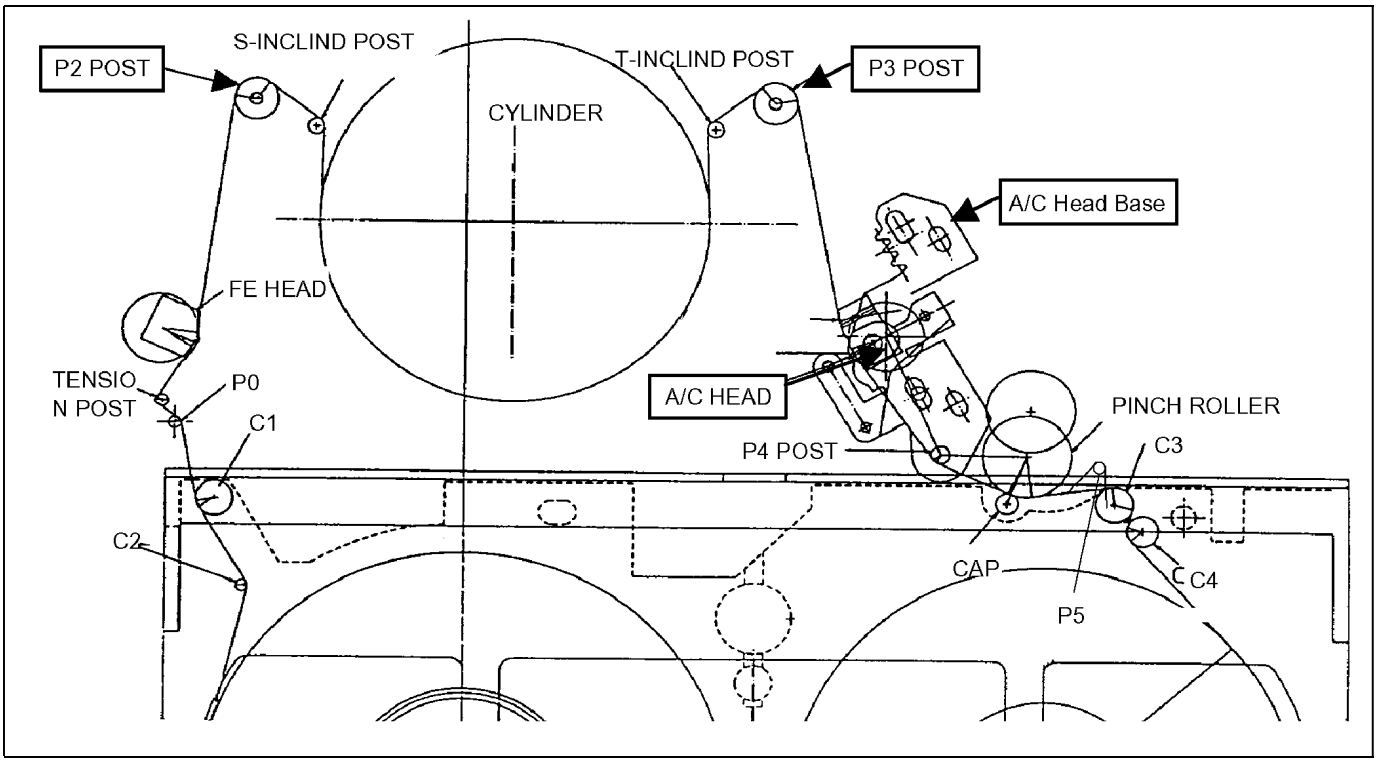
Alignment Tape	VFM8125H3F
Test Point of Playback Envelope	TW3001 (or TW4502)

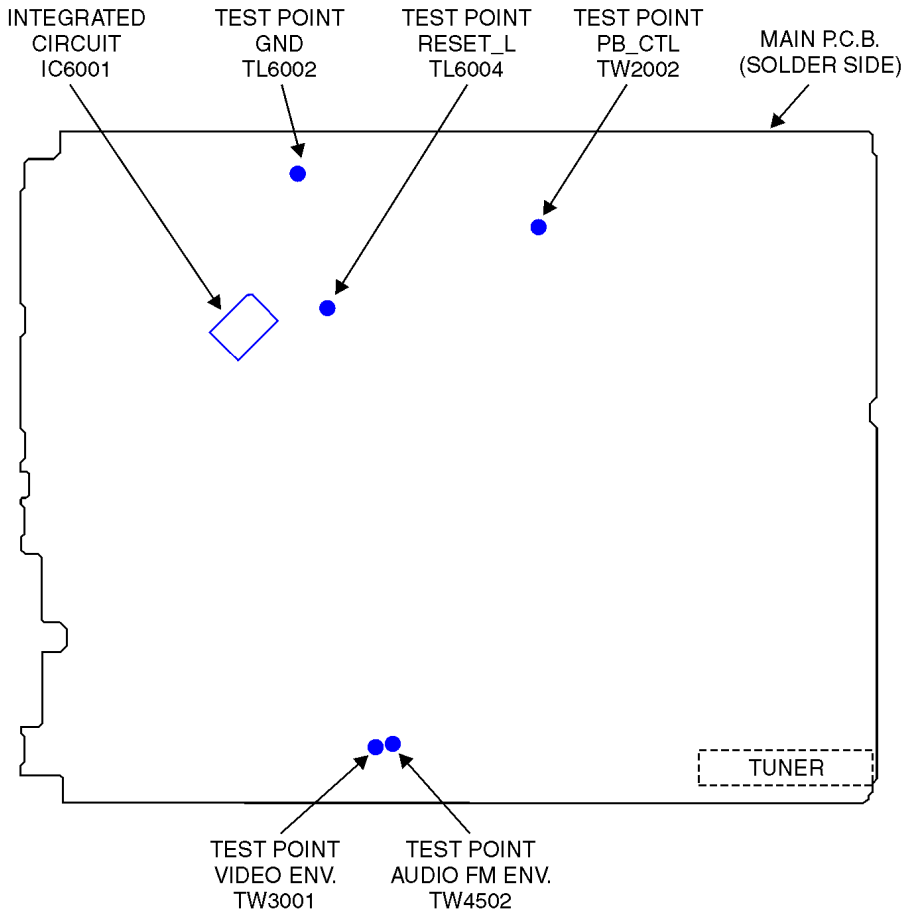


Playback Envelope

● Main symptoms and Adjustment point

Envelope	Post Name	Adjustment Method
	P2 Post	Turn P2 Post counter-clockwise (Approx. 1/2 revolution)
	P2 Post	Turn P2 Post clockwise (Approx. 1/4 revolution)
	P3 Post	Turn P3 Post clockwise (Approx. 1/2 revolution)
	P3 Post	Turn P3 Post counter-clockwise (Approx. 1/4 revolution)
	P2 Post P3 Post	Turn P2 Post clockwise (Less than 1 revolution) Turn P3 Post counter-clockwise (Less than 1revolution)


P2 POST
S-INCLIND POST
T-INCLIND POST
P3 POST
CYLINDER
A/C Head Base
FE HEAD
TENSIO
N POST
P0
C1
A/C HEAD
PINCH ROLLER
P4 POST
C3
C2
CAP
C4
P5


INTEGRATED
CIRCUIT
IC6001
TEST POINT
GND
TL6002
TEST POINT
RESET_L
TL6004
TEST POINT
PB_CTL
TW2002
MAIN P.C.B.
(SOLDER SIDE)
TUNER
TEST POINT
VIDEO ENV.
TW3001
TEST POINT
AUDIO FM ENV.
TW4502

11.3. (DVD) STANDARD INSPECTION SPECIFICATION AFTER MAKING REPAIRS

After making repairs, we recommend performing the following inspection, to check normal operation.

No.	Procedure	Item to Check
1	Turn on the power, and confirm items pointed out.	Items pointed out should reappear.
2	Insert RAM disc.	The Panasonic RAM disc should be recognized.
3	Enter the EE (TU IN / AV IN - AV OUT) mode.	No abnormality should be seen in the picture, sound or operation.
4	Perform auto recording and playback for one minute using the RAM disc.	No abnormality should be seen in the picture, sound or operation. *Panasonic DVD-RAM disc should be used when recording and playback.
5	If a problem is caused by a VCD, DVD-R, DVD-Video, Audio-CD, or MP3, playback the test disc.	No abnormality should be seen in the picture, sound or operation.
6	After checking and making repairs, upgrade the firmware to the latest version.	Make sure that [FIRM_SUCCESS] appears in the FL displays. *[UNSUPPORT] display means the unit is already updated to newest same version. Then version up is not necessary.
7	Transfer [9][9] in the service mode setting, and initialize the service settings (return various settings and error information to their default values. The laser time is not included in this initialization).	Make sure that [CLR SERV] appears in the FL display. After checking it, turn the power off.
8	When replacing of RAM drive, transfer [9] [5] in the service mode setting to delete Laser used time.	Make sure that [CLR LASER] appears in the FL display. After that, turn power off.

Use the following checklist to establish the judgement criteria for the picture and sound.

Item	Contents	Check	Item	Contents	Check
Picture	Block noise		Sound	Distorted sound	
	Crosscut noise			Noise (static, background noise, etc.)	
	Dot noise			The sound level is too low.	
	Picture disruption			The sound level is too high.	
	Not bright enough			The sound level changes.	
	Too bright				
	Flickering color				
	Color fading				

12 MISCELLANEOUS

12.1. ABBREVIATIONS

12.1.1. DVD

INITIAL/LOGO		ABBREVIATIONS
A	A0~UP	ADDRESS
	ACLK	AUDIO CLOCK
	AD0~UP	ADDRESS BUS
	ADATA	AUDIO PES PACKET DATA
	ALE	ADDRESS LATCH ENABLE
	AMUTE	AUDIO MUTE
	AREQ	AUDIO PES PACKET REQUEST
	ARF	AUDIO RF
	ASI	SERVO AMP INVERTED INPUT
	ASO	SERVO AMPOUTPUT
	ASYNC	AUDIO WORD DISTINCTION SYNC
B	BCK	BIT CLOCK (PCM)
	BCKIN	BIT CLOCK INPUT
	BDO	BLACK DROP OUT
	BLKCK	SUB CODE BLOCK CLOCK
	BOTTOM	CAP. FOR BOTTOM HOLD
	BYP	BYPATH
	BYTCK	BYTE CLOCK
C	CAV	CONSTANT ANGULAR VELOCITY
	CBDO	CAP. BLACK DROP OUT
	CD	COMPACT DISC
	CDSCK	CD SERIAL DATA CLOCK
	CDSRDATA	CD SERIAL DATA
	CDRF	CD RF (EFM) SIGNAL
	CDV	COMPACT DISC-VIDEO
	CHNDATA	CHANNEL DATA
	CKSL	SYSTEM CLOCKSELECT
	CLV	CONSTANT LINEAR VELOCITY
	COFTR	CAP. OFF TRACK
	CPA	CPU ADDRESS
	CPCS	CPU CHIP SELECT
	CPDT	CPU DATA
	CPUADR	CPU ADDRESS LATCH
	CPUADT	CPU ADDRESS DATA BUS
	CPUIRQ	CPU INTERRUPT REQUEST
	CPRD	CPU READ ENABLE
	CPWR	CPU WRITE ENABLE
	CS	CHIPSELECT
	CSYNCIN	COMPOSITE SYNC IN
	CSYNCOUT	COMPOSITE SYNC OUT
D	DACCK	D/A CONVERTER CLOCK
	DEEMP	DEEMPHASIS BIT ON/OFF
	DEMPH	DEEMPHASIS SWITCHING
	DIG0~UP	FL DIGIT OUTPUT
	DIN	DATA INPUT
	DMSRCK	DM SERIAL DATA READ CLOCK
	DMUTE	DIGITAL MUTE CONTROL
	DO	DROP OUT
	DOUT0~UP	DATAOUTPUT
	DRF	DATA SLICE RF (BIAS)
	DRPOUT	DROP OUT SIGNAL
	DREQ	DATA REQUEST
	DRESP	DATA RESPONSE
	DSC	DIGITAL SERVO CONTROLLER
	DSLF	DATA SLICE LOOP FILTER
	DVD	DIGITAL VIDEO DISC

INITIAL/LOGO		ABBREVIATIONS
E	EC	ERROR TORQUE CONTROL
	ECR	ERROR TORQUE CONTROL REFERENCE
	ENCSEL	ENCODER SELECT
	ETMCLK	EXTERNAL M CLOCK (81MHz/40.5MHz)
	ETSCLK	EXTERNAL S CLOCK (54MHz)
F	FBAL	FOCUS BALANCE
	FCLK	FRAME CLOCK
	FE	FOCUS ERROR
	FFI	FOCUS ERROR AMP INVERTED INPUT
	FEO	FOCUS ERROR AMP OUTPUT
	FG	FREQUENCY GENERATOR
	FSC	FREQUENCY SUB CARRIER
	FSCK	FS (384 OVER SAMPLING) CLOCK

INITIAL/LOGO		ABBREVIATIONS
G	GND	COMMON GROUNDING (EARTH)
H	HA0~UP	HOST ADDRESS
	HD0~UP	HOST DATA
	HINT	HOST INTERRUPT
	HRXW	HOST READ/WRITE
I	IECOUT	IEC958 FORMAT DATA OUTPUT
	IPFRAG	INTERPOLATION FLAG
	IREF	I (CURRENT) REFERENCE
	ISEL	INTERFACE MODE SELECT
L	LDON	LASER DIODE CONTROL
	LPC	LASER POWER CONTROL
	LRCK	L CH/R CH DISTINCTION CLOCK
M	MA0~UP	MEMORY ADDRESS
	MCK	MEMORY CLOCK
	MCKI	MEMORY CLOCK INPUT
	MCLK	MEMORY SERIAL COMMAND CLOCK
	MDATA	MEMORY SERIAL COMMAND DATA
	MDQ0~UP	MEMORY DATA INPUT/OUTPUT
	MDQM	MEMORY DATA I/O MASK
	MLD	MEMORYSERIAL COMMAND LOAD
	MPEG	MOVING PICTURE EXPERTS GROUP
O	ODC	OPTICAL DISC CONTROLLER
	OFTR	OFF TRACKING
	OSCI	OSCILLATOR INPUT
	OSCO	OSCILLATOR OUTPUT
	OSD	ON SCREEN DISPLAY
P	P1~UP	PORT
	PCD	CD TRACKING PHASE DIFFERENCE
	PCK	PLL CLOCK
	PDVD	DVD TRACKING PHASE DIFFERENCE
	PEAK	CAP. FOR PEAK HOLD
	PLLCLK	CHANNEL PLL CLOCK
	PLLOK	PLL LOCK
	PWMCTL	PWM OUTPUT CONTROL
	PWMDA	PULSE WAVE MOTOR DRIVEA
	PWMOA, B	PULSE WAVE MOTOR OUT A, B

INITIAL/LOGO		ABBREVIATIONS
R	RE	READ ENABLE
	RFENV	RF ENVELOPE
	RFO	RF PHASE DIFFERENCE OUTPUT
	RS	(CD-ROM) REGISTER SELECT
	RSEL	RF POLARITY SELECT
	RST	RESET
	RSV	RESERVE

INITIAL/LOGO		ABBREVIATIONS
S	SBI0, 1	SERIAL DATA INPUT
	SBO0	SERIAL DATA OUTPUT
	SBT0, 1	SERIAL CLOCK
	SCK	SERIAL DATA CLOCK
	SCKR	AUDIO SERIAL CLOCK RECEIVER
	SCL	SERIAL CLOCK
	SCLK	SERIAL CLOCK
	SDA	SERIAL DATA
	SEG0~UP	FL SEGMENT OUTPUT
	SELCLK	SELECTCLOCK
	SEN	SERIAL PORT ENABLE
	SIN1, 2	SERIAL DATA IN
	SOUT1, 2	SERIAL DATA OUT
	SPDI	SERIAL PORT DATA INPUT
	SPDO	SERIAL PORT DATA OUTPUT
	SPEN	SERIAL PORT R/W ENABLE
	SPRCLK	SERIAL PORT READ CLOCK
	SPWCLK	SERIAL PORT WRITE CLOCK
	SQCK	SUB CODE Q CLOCK
	SQCX	SUBCODE Q DATA READ CLOCK
	SRDATA	SERIAL DATA
	SRMADR	SRAM ADDRESS BUS
	SRMDT0~7	SRAM DATA BUS 0~7
	SS	START/STOP
	STAT	STATUS
	STCLK	STREAM DATA CLOCK
	STD0~UP	STREAM DATA
	STENABLE	STREAM DATA INPUT ENABLE
	STSEL	STREAM DATA POLARITY SELECT
	STVALID	STREAM DATAVALIDITY
	SUBC	SUB CODE SERIAL
	SBCK	SUB CODE CLOCK
	SUBQ	SUB CODE Q DATA
	SYSCLK	SYSTEM CLOCK
T	TE	TRACKING ERROR
	TIBAL	BALANCE CONTROL
	TID	BALANCE OUTPUT 1
	TIN	BALANCE INPUT
	TIP	BALANCE INPUT
	TIS	BALANCE OUTPUT 2
	TPSN	OP AMP INPUT
	TPSO	OP AMP OUTPUT
	TPSP	OP AMP INVERTED INPUT
	TRCRS	TRACK CROSSSIGNAL
	TRON	TRACKING ON
	TRSON	TRAVERSE SERVO ON

INITIAL/LOGO		ABBREVIATIONS
V	VBLANK	V BLANKING
	VCC	COLLECTOR POWER SUPPLY VOLTAGE
	VCDCONT	VIDEO CD CONTROL (TRACKING BALANCE)
	VDD	DRAIN POWER SUPPLY VOLTAGE
	VFB	VIDEO FEED BACK
	VREF	VOLTAGE REFERENCE
	VSS	SOURCE POWER SUPPLYVOLTAGE
W	WAIT	BUS CYCLE WAIT
	WDCK	WORD CLOCK
	WEH	WRITE ENABLE HIGH
	WSR	WORD SELECT RECEIVER
X	X	X´ TAL
	XALE	X ADDRESS LATCH ENABLE
	XAREQ	X AUDIO DATA REQUEST
	XCDROM	X CD ROM CHIP SELECT
	XCS	X CHIP SELECT
	XCSYNC	X COMPOSITE SYNC
	XDS	X DATA STROBE
	XHSYNCO	X HORIZONTAL SYNC OUTPUT
	XHINT	XH INTERRUPTREQUEST
	XI	X´ TAL OSCILLATOR INPUT
	XINT	X INTERRUPT
	XMW	X MEMORY WRITE ENABLE
	XO	X´ TAL OSCILLATOR OUTPUT
	XRE	X READ ENABLE
	XSRMCE	X SRAM CHIP ENABLE
	XSRMOE	X SRAM OUTPUT ENABLE
	XSRMWE	X SRAM WRITE ENABLE
	XVCS	X V-DEC CHIPSELECT
	XVDS	X V-DEC CONTROL BUS STROBE
	XVSYNCO	X VERTICAL SYNC OUTPUT

12.1.2. VHS

443NT [L]	4.43 NTSC Ⓛ	BIL	BILINGUAL
A. COMP	AUDIO COMPONENT SIGNAL	BIL [L]	BILINGUAL Ⓛ
A. COMPO	AUDIO COMPONENT SIGNAL	BIL. [H]	BILINGUAL Ⓗ
A. D.P [L]	AUDIO DUBBING PAUSE Ⓛ	BIL/M1 [L]	BILINGUAL Ⓛ
A. D/L [L]	AUDIO DUBBING PAUSE Ⓛ	BS CLOCK	BS CLOCK
A. DEF [S]	AUDIO DEFEAT	BS DATA	BS DATA
A. DEF [S] [L]	AUDIO DEFEAT	BS LCH IN	BS L CHANNEL INPUT
A. DUB P [L]	AUDIO DUBBING PAUSE Ⓛ	BS MIX [H]	BS MIX Ⓗ
A. DUB [H]	AUDIO DUBBING Ⓗ	BS MON [H]	BS MONITOR Ⓗ
A. ERASE	AUDIO ERASE	BS MONI [H]	BS MONITOR Ⓗ
A. H. SW	AUDIO HEAD SWITCHING PULSE	BS RCH IN	BS R CHANNEL INPUT
A. HEAD [R]	AUDIO HEAD (REC)	BS VIDEO	BS VIDEO SIGNAL
A. HEAD [W]	AUDIO HEAD (PLAY)	BS VIDEO/BS1	BS VIDEO SIGNAL
A. IN [L]	AUDIO INPUT (L)	BS [H]	BS Ⓗ
A. IN [R]	AUDIO INPUT (R)	BS. LEVEL	BS LEVEL
A. MUT [H]	AUDIO MUTE Ⓗ	BS. M [H]	BS MONITOR Ⓗ
A. MUTE [H]	AUDIO MUTE Ⓗ	BS/VTR [H]	BS/VTR Ⓗ
A. OUT [L]	AUDIO OUTPUT (L)	BUS CLK	BUS CLOCK
A. OUT [R]	AUDIO OUTPUT (R)	BUS LSN	BUS LISTEN
A. RF OUT	AUDIO RF SIGNAL OUTPUT	BUS TLK	BUS TALK
A/VS/S. DATA	AV SW/SERIAL DATA	BUZZER	BUZZER
AC ONLINE	AC ONLINE	CAP EC	CAPSTAN TORQUE CONTROL
AC. O/EE. H	AC ONLINE/EE Ⓗ	CAP M GND	CAPSTAN MOTOR GND
AFC S C	AFC S CURVE	CAP. ET	CAPSTAN TORQUE CONTROL
AFC [S]	AFC S CURVE	CAP. FG1	CAPSTAN FG1 PULSE
AFC. DEF	AFC DEFEAT	CAP. FG2	CAPSTAN FG2 PULSE
ARFC OUT	AUDIO RF SIGNAL OUTPUT	CAS. SW	CASSETTE SW
ART. V	ARTIFICIAL VERTICAL SYNC SIGNAL	CCN	PLAYBACK CONTROL SIGNAL (–)
ART. V. MM	ARTIFICIAL VERTICAL SYNC SIGNAL MONO MULTI	CCP	PLAYBACK CONTROL SIGNAL (+)
		CHM	CONTROL SIGNAL (+)
ART. V/H/N	ARTIFICIAL VERTICAL SYNC SIGNAL Ⓗ/NORMAL	CHP	CONTROL SIGNAL (–)
		CINEM [L]	CINEMA Ⓛ
AT. V/H/N	ARTIFICIAL VERTICAL SYNC SIGNAL	CINEMA [L]	CINEMA Ⓛ
ATSW/TEST/NOR/SE	TEST/NORMAL/SERVICE	CINEMA/MIX	CINEMA/MIX
AUDIO IN [L]	AUDIO INPUT (L)	CKL	RATCH LOCK
AUDIO IN [R]	AUDIO INPUT (R)	CKS	SHIFT LOCK
AUDIO OUT [L]	AUDIO OUTPUT (L)	CL	CLOCK
AUDIO OUT [R]	AUDIO OUTPUT (R)	CLK	CLOCK
AUDIO SELECT [H]	AUDIO SELECT Ⓗ	CLK (C.G)	CLOCK
AUDIO. L	AUDIO (L)	CLOCK. IN	CLOCK INPUT
AUDIO. R	AUDIO (R)	CLP	CLAMP
AV CNT	AV CONTROL	COL/B/W/NOR	COLOUR/BLACK & WHITE/NORMAL
AV CTL	AV CONTROL	COLOR [H]	COLOUR Ⓗ
AV CTL/S. CLK	AV CONTROL/SERIAL CLOCK	CONV	CONVERTOR
AV. C.M.	AV CONTROL MODE	CS	CHIP SELECT
AVCNT/METER. R	AV CONTROL/LEVEL METER (R)	CTL GND	CONTROL GND
AVSW/METER. L	AV SW/LEVEL METER (L)	CTL HEAD [+]	CONTROL HEAD (+)
B MODE. H	B MODE Ⓗ	CTL HEAD [–]	CONTROL HEAD (–)
B.G.P	BURST GATE PULSE	CTL [+]	CONTROL HEAD (+)
BACKUP 5V	BACK UP 5V	CTL [–]	CONTROL HEAD (–)
BAND. U.E.	BAND U	CUE BIAS	CUE BIAS
BANDVL. D	BAND VL	CURRENT LIM	CURRENT LIMMITER
BI/MI [L]	BILINGUAL/MIX Ⓛ	CYL ET	CYLINDER TORQUE CONTROL

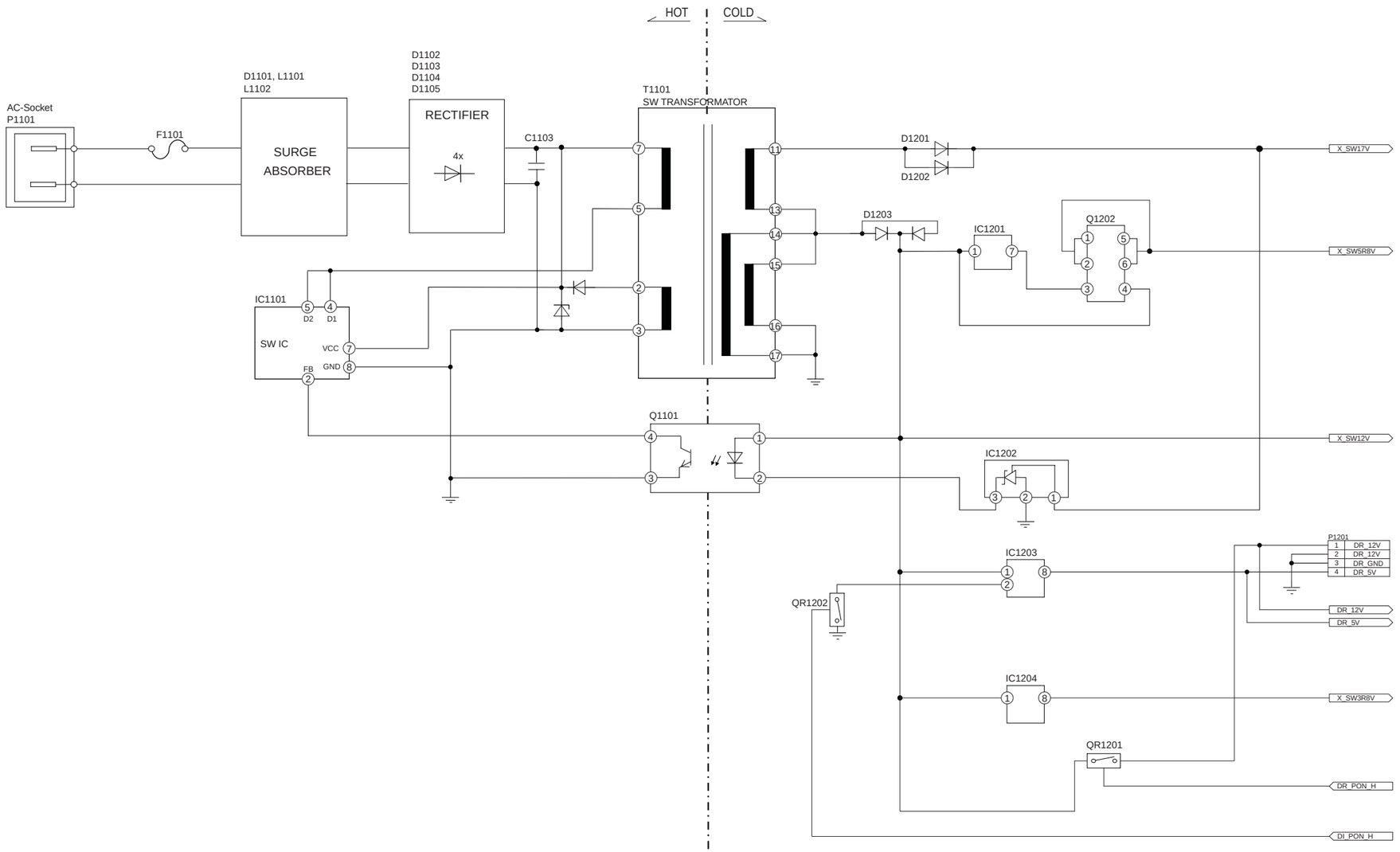
CYL GND	CYLINDER GND	FULL. E. 12V	FULL ERASE 12V
D.F.M. REC [H]	DELAIED FM RECORDING Ⓗ	GND [A]	GND (ANALOG)
D. FM REC [L]	DELAIED FM RECORDING Ⓛ	GND [TU]	GND (TUNER)
D. GND	DIGITAL GND	GND/N. SW. 12V	GND/NON SW 12V
D. REC [H]	DELAYED RECORDING Ⓗ	H. SYNC	HORIZONTAL SYNC
D4/S. LED	D4/STILL LED	H. AMP. SW	HEAD AMP SW PULSE
D4/STILLED	D4/STILL LED	H. P <R>	HEAD PHONE (R)
DAC [CLK]	TUNER DAC (CLOCK)	H. P <L>	HEAD PHONE (L)
DAC/FSCS	TUNER DAC/FS CHIP SELECT	H. P GND	HEAD PHONE GND
DAREC [H]	DELAYED AUDIO RECORDING Ⓗ	H. P OUT [L]	HEAD PHONE OUTPUT (L)
DATA	DATA	H. P OUT [R]	HEAD PHONE OUTPUT (R)
DECODER [L]	DECODER (L)	H. SW	HEAD SW PULSE
DECODER [R]	DECODER (R)	HEAD PHONE [L]	HEAD PHONE (L)
DEW	DEW	HEAD PHONE [R]	HEAD PHONE (R)
DEW SNS	DEW SENSOR	HEAD SW	HEAD SW
DFMRE [H]	DELAYED FM AUDIO RECORDING Ⓗ	HEATER [+]	HEATER (+)
E. REC 5V	EXCEPT RECORDING 5V	HEATER [–]	HEATER (–)
EC	ERROR TORQUE CONTROL	HSS	HORIZONTAL SYNC SIGNAL
ECR	ERROR TORQUE CONTROL	HTR [+]	HEATER (+)
	REFERENCE VOLTAGE	HTR [–]	HEATER (–)
EDT TRIG [L]	EDIT TRIGGER Ⓛ	I RFE	REFERENCE CURRENT
EDIT [H]	EDIT Ⓗ	ICL	CONTROL AGC CIRCUIT
EE [H]	EE Ⓗ	IF	INTERMEDIATE FREQUENCY
EE [H]/INS [M]	EE Ⓗ/INSERT Ⓜ	IN SELA1	INPUT SELECT A1 POSITION
EE. VV. TR	EE/VV/TRICK PLAY	IN SELA2	INPUT SELECT A2 POSITION
EJECT. PO	EJECT POSITION	IN SELA3	INPUT SELECT A3 POSITION
EJECT/VDET	EJECT/REVERSE SLOW LOCK	INS L/R [L]	INSERT Lch/Rch Ⓛ
ENV. SEL	ENVELOPE SELECT	INS. [H]	INSERT Ⓗ
ENVE. OUT	ENVELOPE OUTPUT	INSEL A1	INPUT SELECT A1 POSITION
ENVE. SEL	ENVELOPE SELECT	INSEL A2	INPUT SELECT A2 POSITION
ENV SELECT	ENVELOPE SELECT	INSERT	INSERT
EP [H]	LP Ⓗ	INSERT [H]	INSERT Ⓗ
EP/LP [H]	LP Ⓗ	IO CS	INPUT/OUTPUT CHIP SELECT
EP/LP/SP	LP/SP	JOG1	JOG1
EP/SS [H]	LP/SLOW/STILL/STOP Ⓗ	JOG S3 LED/FOWRD	JOG LED/FORWARD LED
EPROMCS	EPROM CHIP SELECT	JOG/F. LED	JOG LED/FORWARD LED
EX. REC 5V	EXCEPT RECORDING 5V	JSB [H]	JSB Ⓗ
FF/REW [L]	FIRST FORWARD/REWIND Ⓛ	JST. CLCK	JUST CLOCK
FG1 IN	FG1 PULSE INPUT	JST. CLK	JUST CLOCK
FG2 IN	FG2 PULSE INPUT	JST. CLOCK	JUST CLOCK
FILTER ADJUSTMENT	FILTER ADJUSTMENT	L. OUT	Lch OUTPUT
FLY ERASE [H]	FLYING ERASE HEAD ON Ⓗ	L. CH [H]	Lch Ⓗ
FLY ON [H]	FLYING ERASE HEAD ON Ⓗ	L. CH [L]	Lch Ⓛ
FLY. E [H]	FLYING ERASE HEAD ON Ⓗ	LED (MAIN)	LED (MAIN)
FM MUT [H]	FM AUDIO MUTE Ⓗ	LED (STEREO)	LED (STEREO)
FM MUTE [H]	FM AUDIO MUTE Ⓗ	LED (SUB)	LED (SUB)
FM OUT [L]	FM OUTPUT (L)	LED CKL	LED SERIAL CLOCK
FM OUT [R]	FM OUTPUT (R)	LED CKS	LED SERIAL CLOCK
FM PACK OUT [L]	FM PACK OUTPUT (L)	LED DATA	LED SERIAL DATA
FM PACK OUT [R]	FM PACK OUTPUT (R)	LINE IN 1 [L]	LINE INPUT 1 (L)
FM/BS SEL [L]	FM/BS SELECT (L)	LINE IN 1 [R]	LINE INPUT 1 (R)
FM/BS SEL [R]	FM/BS SELECT (R)	LINE IN 2 [L]	LINE INPUT 2 (L)
FS. CLK	FS CLOCK	LINE IN 2 [R]	LINE INPUT 2 (R)
FUL. E [H]	FULL ERASE HEAD ON Ⓗ	LINE IN V	LINE INPUT VIDEO
FULL. E [H]	FULL ERASE HEAD ON Ⓗ	LINE IN [L]	LINE INPUT (L)

LINE IN [R]	LINE INPUT (R)	P-OFF [H]	POWER OFF Ⓗ
LINE OUT [L]	LINE OUTPUT (L)	P-OFF [L]	POWER OFF Ⓛ
LINE OUT [R]	LINE OUTPUT (R)	P. FAIL	POWER FAILURE DETECT
LP [H]	LP Ⓗ	P. OFF [H]	POWER OFF Ⓗ
LPTRI [L]	LP TRICK PLAY Ⓛ	P. OFF [L]	POWER OFF Ⓛ
Lch/A. DUB	Lch/AUDIO DUBBING	PAL [H]	PAL Ⓗ
M GND	MOTOR GND	PAL [L]/NTSC [H]	PAL Ⓛ/NTSC Ⓗ
M REG	MOTOR REGULATOR	PB ADJ OUT	PLAYBACK ADJUST OUTPUT
MAIN OUT	MAIN OUTPUT	PB OUT	PLAYBACK OUTPUT
MAIN [L]	MAIN Ⓛ	PB. H	PLAYBACK Ⓗ
MAIN/MONO	MAIN/MONAURAL	PFG	PG/FG
MAX IN	MAXIMAM INPUT	PHOTSN +B	PHOTO SENSOR +B
MES [H]	MESECAM Ⓗ	PICT. CNT	PICTURE CONTROL
MESE [H]	MESECAM Ⓗ	PLAY LED/RVS LED	PLAY LED/REVERSE LED
MESE [L]	MESECAM Ⓛ	PLAY. PO	PLAY POSITION
METER 5V	LEVEL METER 5V	PLAY/R. LED	PLAY LED/REVERSE LED
METER [L]	LEVEL METER (L)	PLY/DEW	PLAY/DEW Ⓗ
METER [R]	LEVEL METER (R)	POWER OFF [L]	POWER OFF Ⓛ
METER. L/AVS	LEVEL METER (L)	PREROLL [H]	PREROLL Ⓗ
METER. R/AVC	LEVEL METER (R)	PWRFAIL	POWER FAILURE DETECT
MI/BI [L]	MIX Ⓗ/BILIGUAL	R. CH [H]	Rch Ⓗ
MIC GND	MIC GND	R. CH [L]	Rch Ⓛ
MIC IN	MIC INPUT	R. ST	RESET
MIC IN [L]	MIC INPUT (L)	R/S/F	REVERSE Ⓗ/STOP Ⓜ/FORWARD Ⓛ
MIC IN [R]	MIC INPUT (R)	RCH [H]	Rch Ⓗ
MIC [H]	MIC Ⓗ	REC 12V	RECORDING 12V
MIX [H]	MIX Ⓗ	REC CHROMA	RECORDING CHROMINANCE SIGNAL
MIX [H]/CINEMA [L]	MIX Ⓗ/CINEMA SOUND Ⓛ	REC H	RECORDING Ⓗ
MIX/CINE	MIX Ⓗ/CINEMA SOUND Ⓛ	REC IN	RECORDING INPUT
MIX/CINEMA [L]	MIX Ⓗ/CINEMA SOUND Ⓛ	REC OUT [L]	RECORDING OUTPUT Ⓛ
MN. H/M. L	MONAURAL Ⓗ/MAIN Ⓛ	REC START	RECORDING START
MN. H/MAI. L	MONAURAL Ⓗ/MAIN Ⓛ	REC VR [C]	RECORDING VOLUME (COMMON)
MN2/MES. L	MONAURAL 2/MESECAM Ⓛ	REC VR [L]	RECORDING VOLUME (L)
MODE SEL	AUDIO MODE SELECT	REC VR [R]	RECORDING VOLUME (R)
MODE SW	AUDIO MODE SW	REC Y	RECORDING LUMINANCE SIGNAL
MODE. S. IN	AUDIO MODE SELECT INPUT	REC [H]	RECORDING Ⓗ
MODE. S. OUT	AUDIO MODE SELECT OUTPUT	REC. C	RECORDING CHROMINANCE SIGNAL
MONO [H]	MONAURAL Ⓗ	REC. Y	RECORDING LUMINANCE SIGNAL
MONO [H]/MAIN [L]	MONAURAL Ⓗ/MAIN Ⓛ	REC/EE CTL	RECORDING/EE CONTROL
MONO2 [L]	MONAURAL 2	REEL-T	REEL PULSE (TAKE-UP)
MONO2/MESE [FM(L)]	MONAURAL 2/MESECAM (FM Ⓛ)	REEL-S	REEL PULSE (SUPPLY)
MOTOR GND	MOTOR GND	REGULATOR FILTER	REGULATOR FILTER
MUTE	MUTE	RESET	RESET
N. A. REC [L]	NORMAL AUDIO RECORDING	REV M F/R	REVIEW MOTOR FORWARD/REVERSE
N. SW 12V	NON SW 12V		
N. SW. 5. DET	NON SW 5V DETECT	REV M V1	REVIEW MOTOR V1
NICAM	NICAM	REV M V2	REVIEW MOTOR V2
NICAM [L]	NICAM Ⓛ	REV MOTOR F/R	REVIEW MOTOR FORWARD/REVERSE
NOL [H]	PAL Ⓗ/4.43 NTSC Ⓜ/3.58 NTSC Ⓛ		
NOR/SOFT [H]	NORMAL/SOFT TAPE PLAY Ⓗ	REV MOTOR V1	REVIEW MOTOR V1
NORMAL [H]	NORMAL Ⓗ	REV MOTOR V2	REVIEW MOTOR V2
NR BIAS	NR BIAS	REV MOTOR [+]	REVIEW MOTOR (+)
NTSC [L]	NTSC Ⓛ	REV MOTOR [–]	REVIEW MOTOR (+)
OCH	CONTROL AGC CIRCUIT	REV. M. GND	REVIEW MOTOR GND
OUT	OUTPUT	RF. CHROMA	RF CHROMINANCE SIGNAL

RF OUT	RF OUTPUT	SYSCON 5V	SYSTEM CONTROL 5V
RF Y	RF LUMINANCE SIGNAL	SYSTEM	SYSTEM SW
RF. Y. IN	RF LUMINANCE SIGNAL INPUT	T-PHOTO	TAKE-UP PHOTO TRANSISTOR
RF. Y. OUT	RF LUMINANCE SIGNAL OUTPUT	T-RL. PLS	TAKE-UP REEL PULSE
ROTAR. SW	ROTARY SW	T. BUSCLK	TIMER BUS CLOCK
ROTARY	ROTARY SW	T. BUSLSN	TIMER BUS LISTEN
RST	RESET	T. BUSTLK	TIMER BUS TALK
RST [L]	RESET Ⓛ	T. END [L]	TAPE END Ⓛ
Rch/INST	Rch/INSERT	T. PHOTO	TAKE-UP PHOTO TRANSISTOR
S IN	SERIAL DATA INPUT	TAPE END [L]	TAPE END Ⓛ
S OUT	SERIAL DATA OUTPUT	TAPE END [L]/CAM	TAPE END Ⓛ/CAMERA PAUSE
S-PHOTO	SUPPLY PHOTO TRANSISTOR	TEST	TEST MODE
S-RL. PLS	SUPPLY REEL PULSE	TPZ	TRAPEZOIDAL WAVE CIRCUIT
S. CLK	SERIAL CLOCK	TRIC [L]	TRIC PLAY Ⓛ
S. CLK/AV	SERIAL CLOCK/AV	TRICK [L]	TRIC PLAY Ⓛ
S. DATA	SERIAL DATA	TRK. ENV	AUTO TRACKING ENVELOPE DETECT
S. DATA/A	SERIAL DATA	TU. AUDIO	TUNER AUDIO
S. PHOTO	SUPPLY PHOTO TRANSISTOR	TU. GND	TUNER GND
S. TAB [L]	SAFETY TAB SW ON Ⓛ	TU. V. IN	TUNER VIDEO SIGNAL INPUT
S/P/N	SECAM/PAL/NTSC	TU. VIDEO	TUNER VIDEO
SC IN	SERIAL CLOCK INPUT	TUN NOR IN	TUNER NORMAL INPUT
SC OUT	SERIAL CLOCK OUTPUT	TUN R	TUNER AUDIO (R)
SCK SELECT	SERIAL CLOCK SELECT	TUN. AUDIO IN	TUNER AUDIO INPUT
SEL OUT [L]	SELECT OUTPUT (L)	TUNER 12V	TUNER 12V
SEL OUT [R]	SELECT OUTPUT (R)	TUNER L	TUNER AUDIO (L)
SHUTTLE 1	SHUTTLE 1	TUNER V IN	TUNER VIDEO SIGNAL INPUT
SIF	SOUND INTERMEDIATE FREQUENCY	TUNER [L]	TUNER AUDIO (L)
SLMUT [H]	INPUT SELECT MUTE Ⓗ	TUNER [N]	TUNER AUDIO (NORMAL)
SLNID [+]	SOLENOID (+)	TUNER [R]	TUNER AUDIO (R)
SLNID [–]	SOLENOID (–)	TUNER. 12	TUNER 12V
SLW TR. MM	SLOW TRACKING MONO MULTI	TUOFF [H]	TUNER OFF Ⓗ
SLW TR. REF	SLOW TRACKING REFERENCE VOLTAGE	TV. AUDIO	TV AUDIO
		TV/VTR	TV/VTR
SNS. GND	SENSOR GND	TXTON [L]	TEXT ON Ⓛ
SOFT [H]	SOFT TAPE PLAY Ⓗ	U. REG45V	UNREGULATOR 45V
SOFT [H]/NORMAL	SOFT TAPE PLAY Ⓗ/NORMAL Ⓗ	UNREG	UNREGULATOR
SOLENOID ON [L]	SOLENOID ON Ⓛ	UNREG19V	UNREGULATOR 19V
SP [H]	SP Ⓗ	V. REF	REFERENCE VOLTAGE
SP/L/SLP	SP/LP	V. EE [H]	VIDEO EE Ⓗ
SSS [L]	SLOW/STILL/STOP	V. EE [L]	VIDEO EE Ⓛ
STEREO LED	STEREO LED	VCO REF	REFERENCE OSCILLATER
STEREO [H]	STEREO Ⓗ	VD. IN	VIDEO SIGNAL INPUT
STEREO [L]	STEREO Ⓛ	VD. OUT	VIDEO SIGNAL OUTPUT
STOP. PO	STOP POSITION	VIDEO EE [L]	VIDEO EE Ⓛ
STOP/5V	STOP POSITION/5V	VIDEO IN	VIDEO SIGNAL INPUT
STOP1/TAPE SEL	STOP1 POSITION/TAPE SELECT	VIDEO OUT	VIDEO SIGNAL OUTPUT
STOP1/PAL:ST	STOP1 POSITION/PAL	VM	MOTOR VOLTAGE
STOP2. PO	STOP 2 POSITION	VM DOWN [L]	MOTOR VOLTAGE DOWN Ⓛ
STOP2/S-TAB	STOP 2 POSITION/SAFETY TAB SW	VSS	VERTICAL SYNC SIGNAL
STREO [H]	STEREO Ⓗ	VTR [H]	VTR Ⓗ
SUB BIAS	SUB BIAS	VTR. 12V	VTR 12V
SUB. SW	SUB SW	X IN	OSCILLATOR INPUT
SVHS CAS [L]	S-VHS CASSETTE Ⓛ	X OUT	OSCILLATOR OUTPUT
SW. 5. DET	SW 5V DETECT		
SYNC [L]	SYNC Ⓛ		

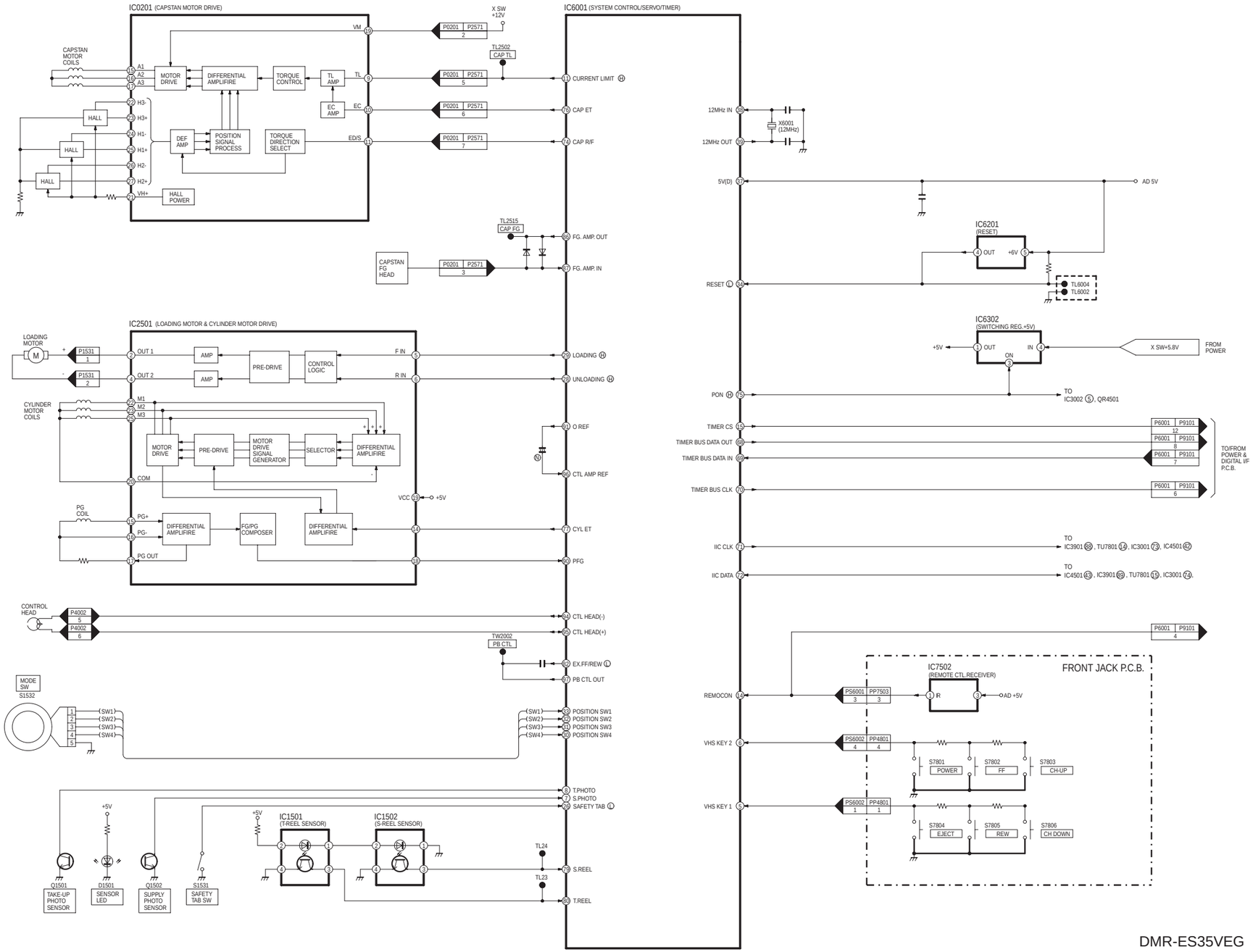
13 BLOCK DIAGRAM

13.1. POWER SUPPLY BLOCK DIAGRAM



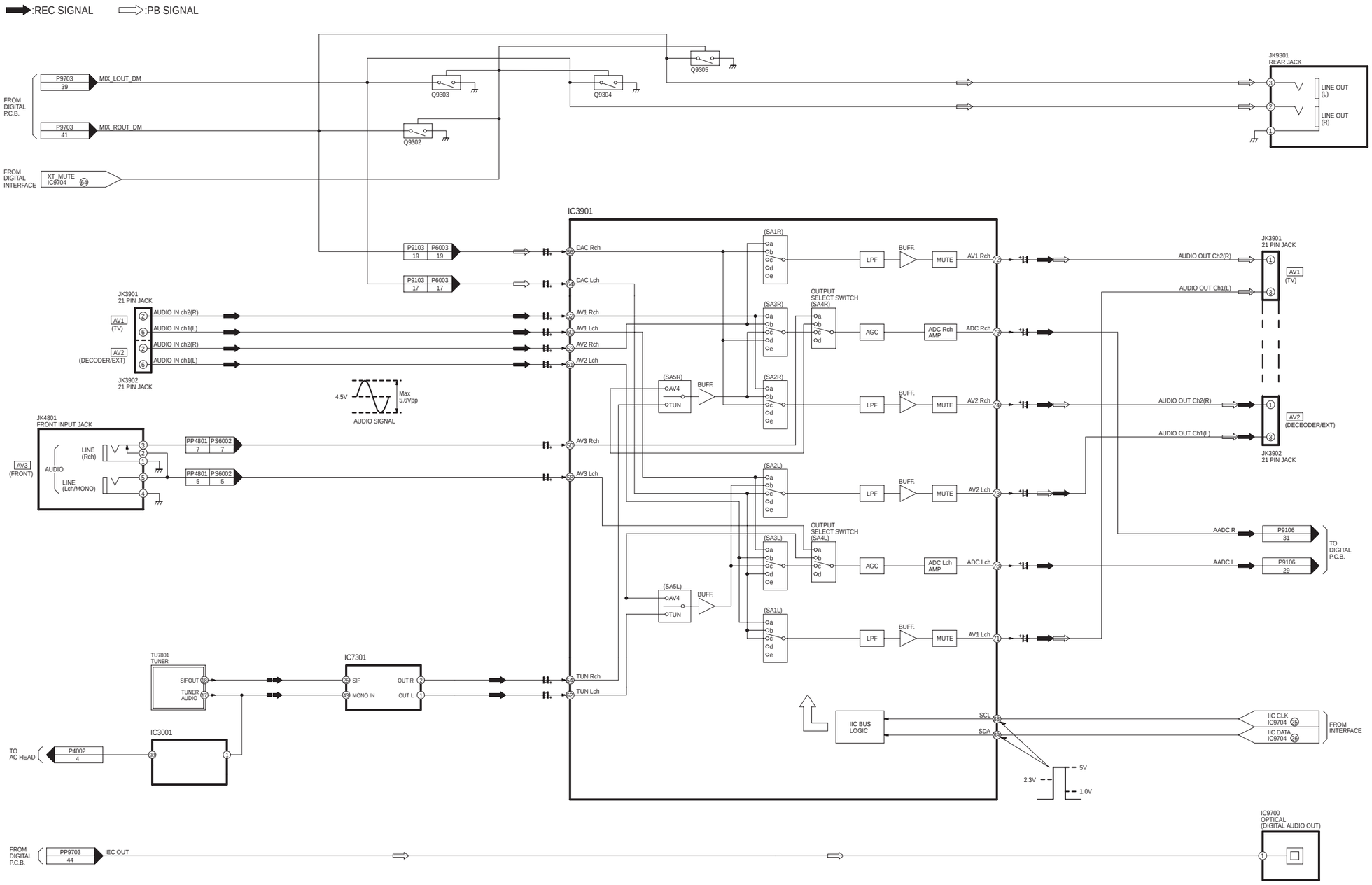
DMR-ES35VEG
DMR-ES35VEC
POWER SUPPLY
BLOCK DIAGRAM

13.2. SYSTEM CONTROL, SERVO & TIMER BLOCK DIAGRAM



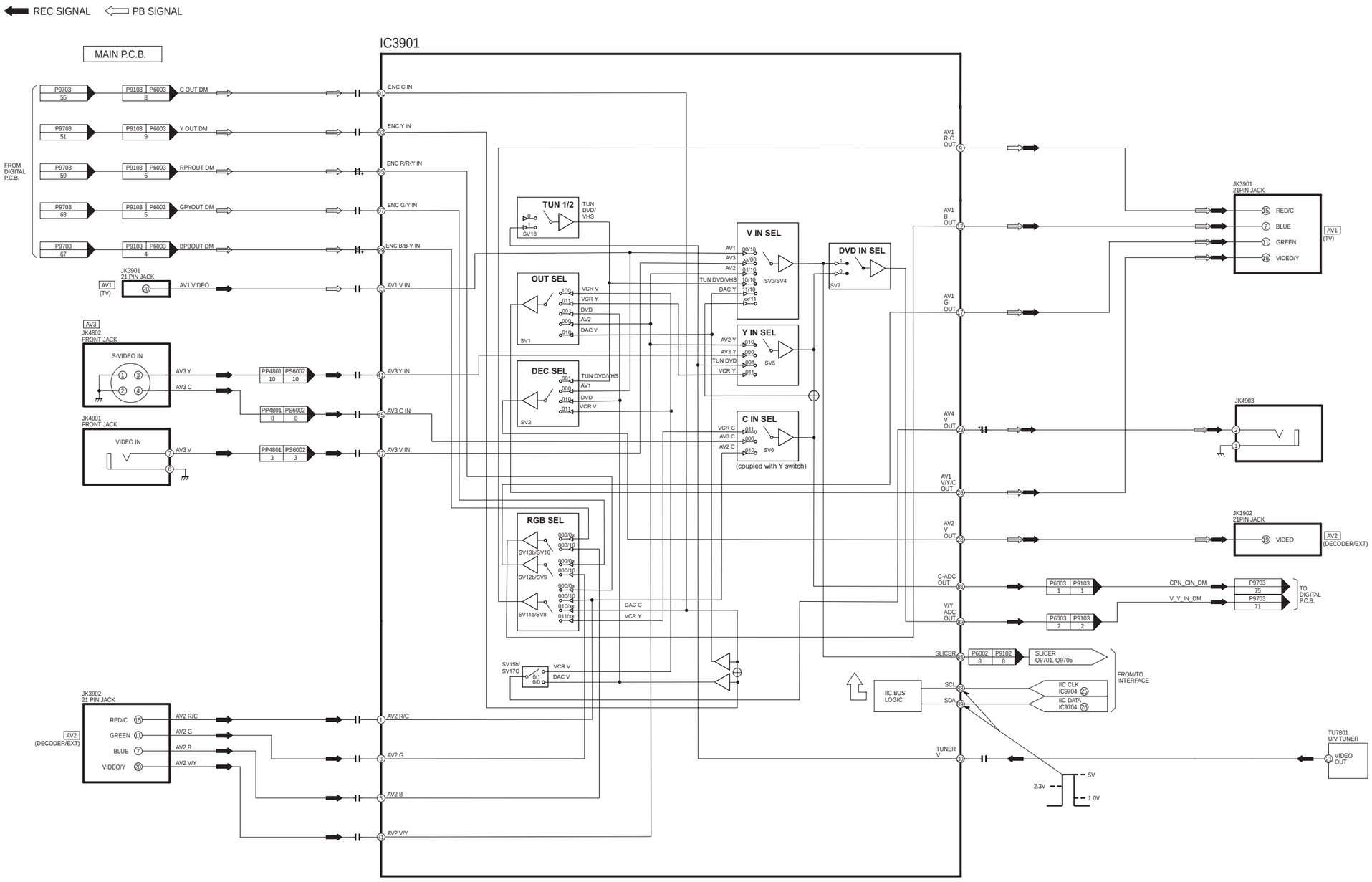
DMR-ES35VEG
DMR-ES35VEC
SYSTEM CONTROL / SERVO & TIMER
BLOCK DIAGRAM

13.3. AUDIO BLOCK DIAGRAM

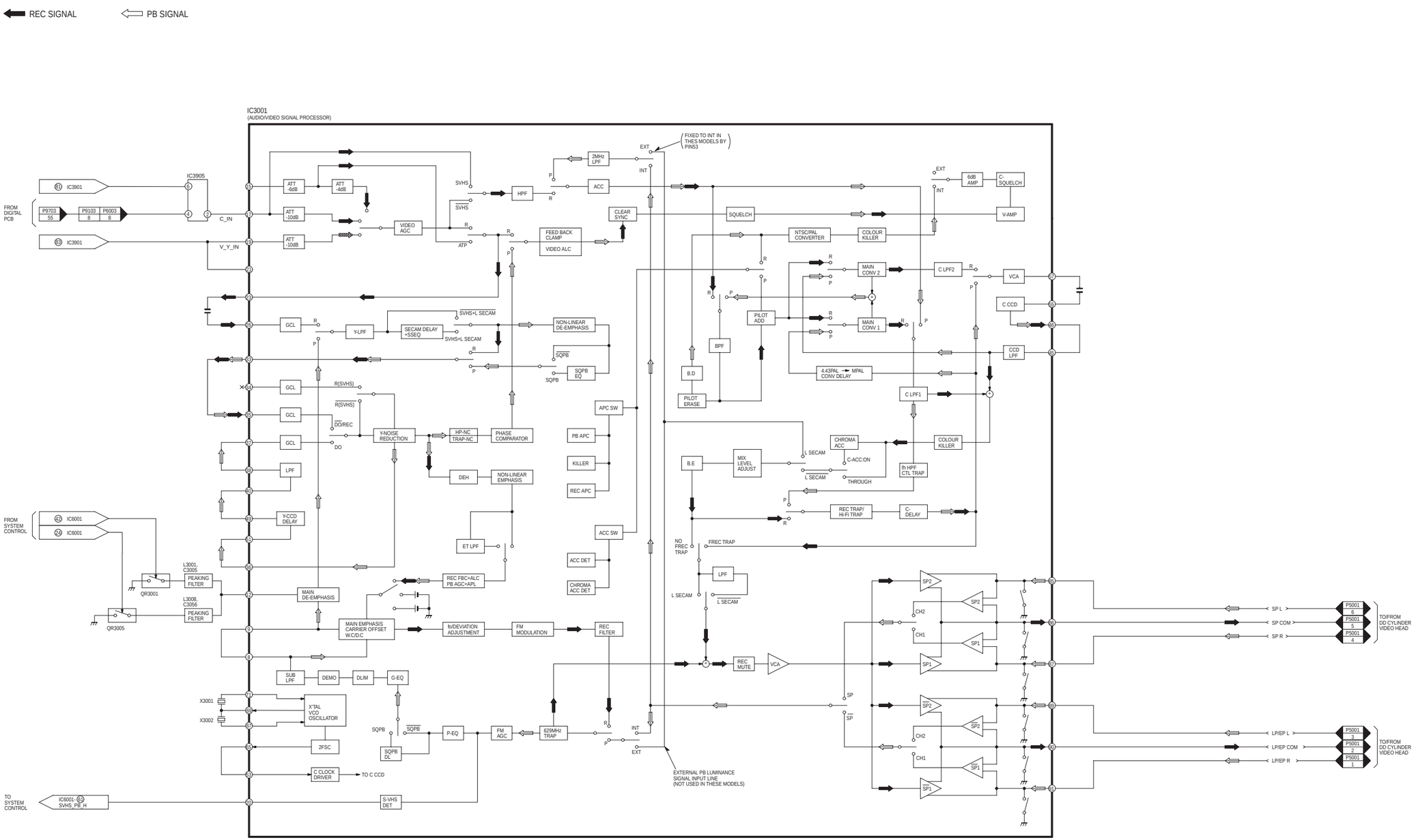


DMR-ES35VEG
DMR-ES35VEC
AUDIO
BLOCK DIAGRAM

13.4. VIDEO BLOCK DIAGRAM

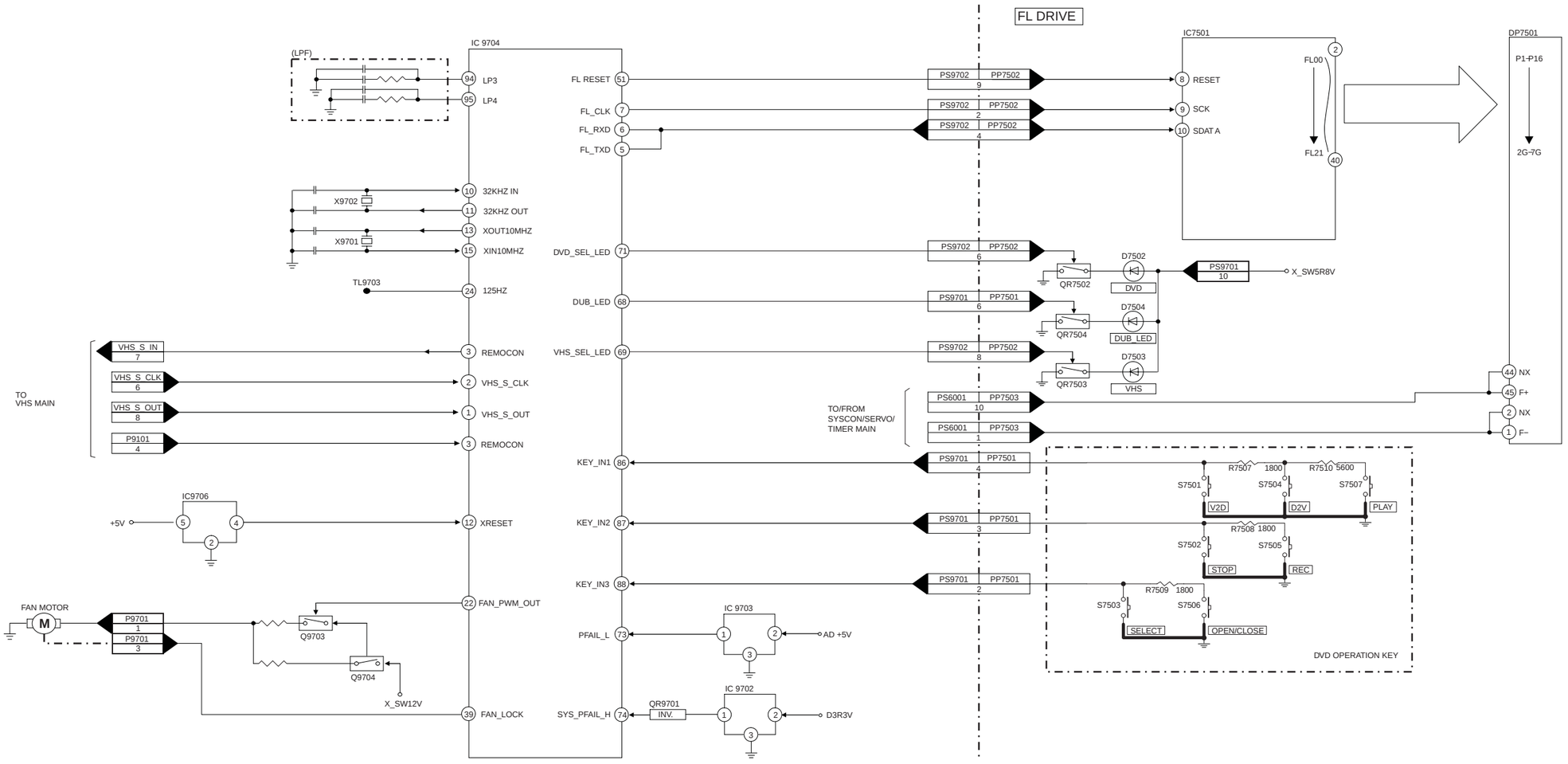


DMR-ES35VEG
DMR-ES35VEC
VIDEO 1/2
BLOCK DIAGRAM



DMR-ES35VEG
DMR-ES35VEC
VIDEO 2/2
BLOCK DIAGRAM

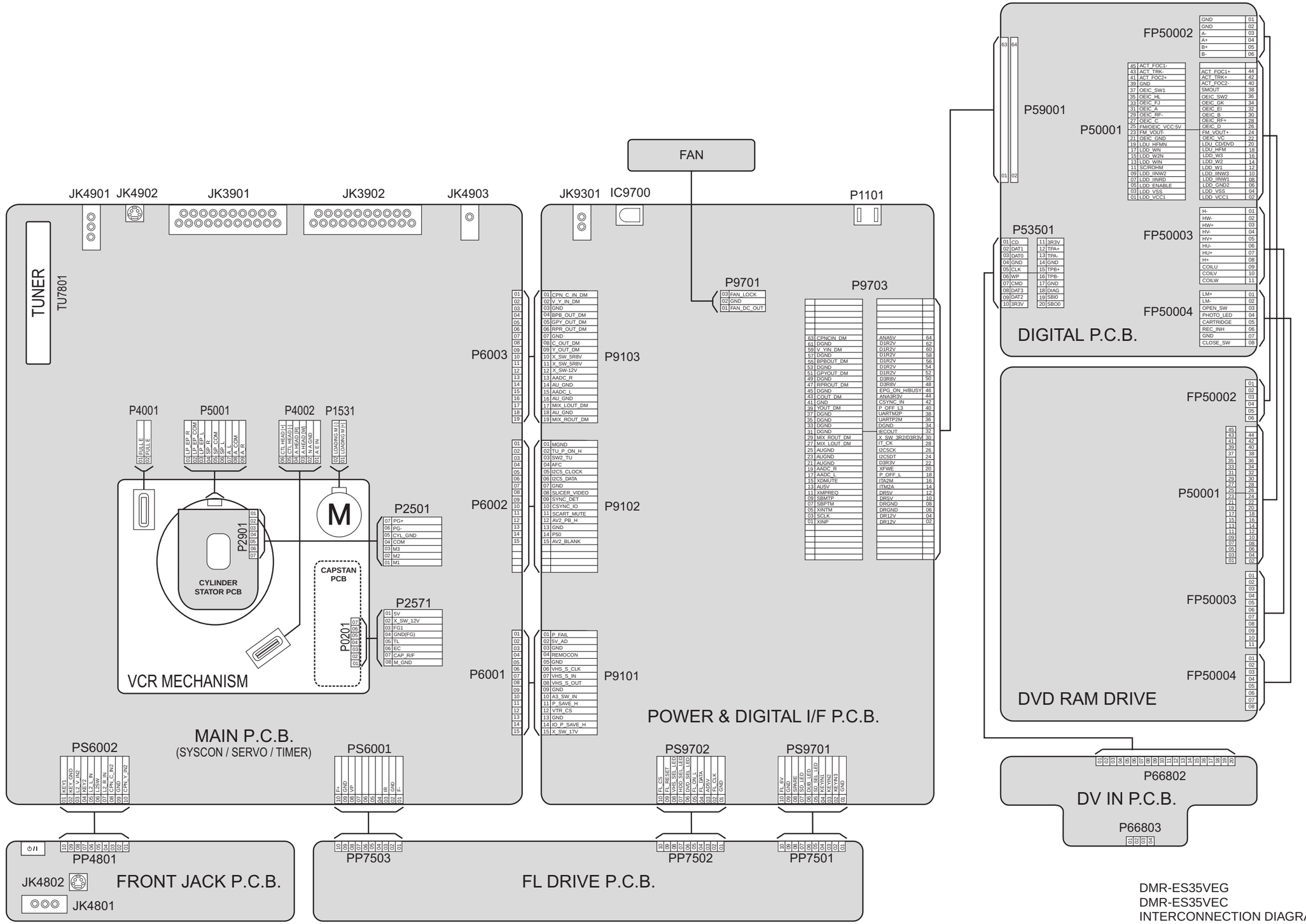
13.5. DIGITAL I/F P.C.B. BLOCK DIAGRAM



DMR-ES35VEG
DMR-ES35VEC
DIGITAL I/F PCB
BLOCK DIAGRAM

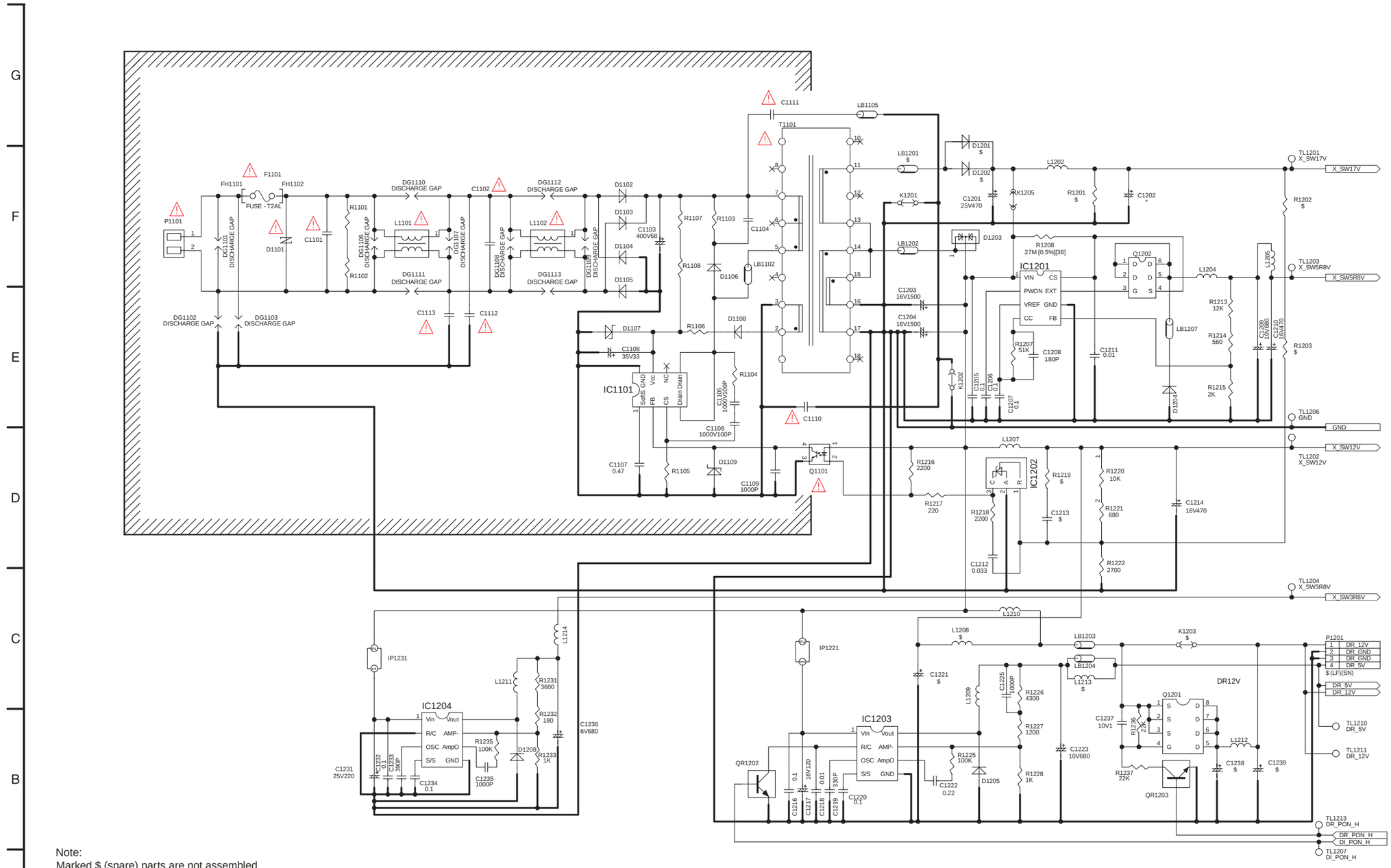
14 SCHEMATIC DIAGRAM

14.1. INTERCONNECTION DIAGRAM



DMR-ES35VEG
DMR-ES35VEC
INTERCONNECTION DIAGRAM

14.2. POWER SUPPLY

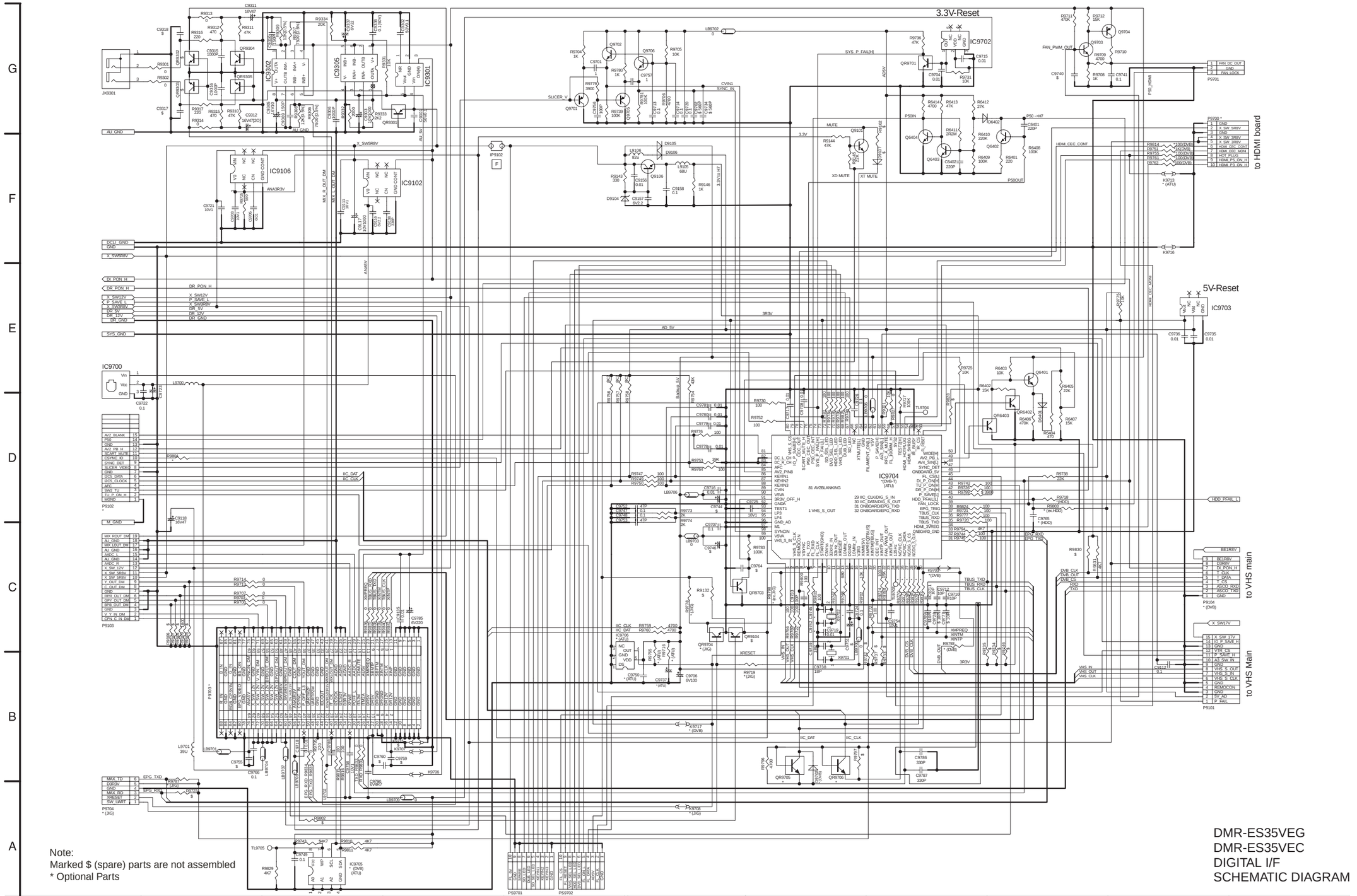


Note:
Marked $ (spare) parts are not assembled
* Optional Parts

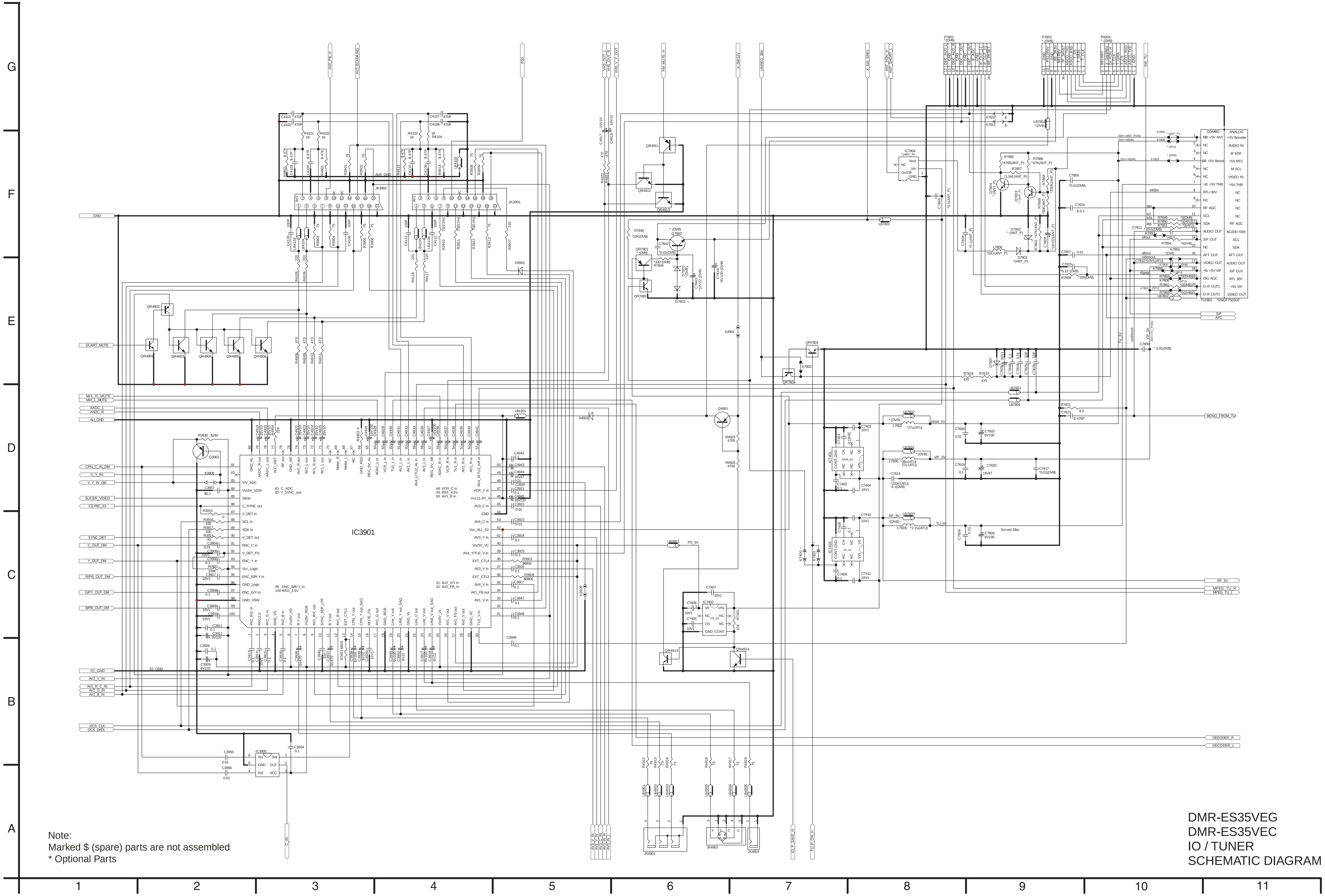
Important Safety Notice: ⚠
Components identified with the mark have the special characteristics for safety.
When replacing any of these components use only the same type.

DMR-ES35VEG
DMR-ES35VEC
POWER SUPPLY
SCHEMATIC DIAGRAM

14.3. DIGITAL I/F



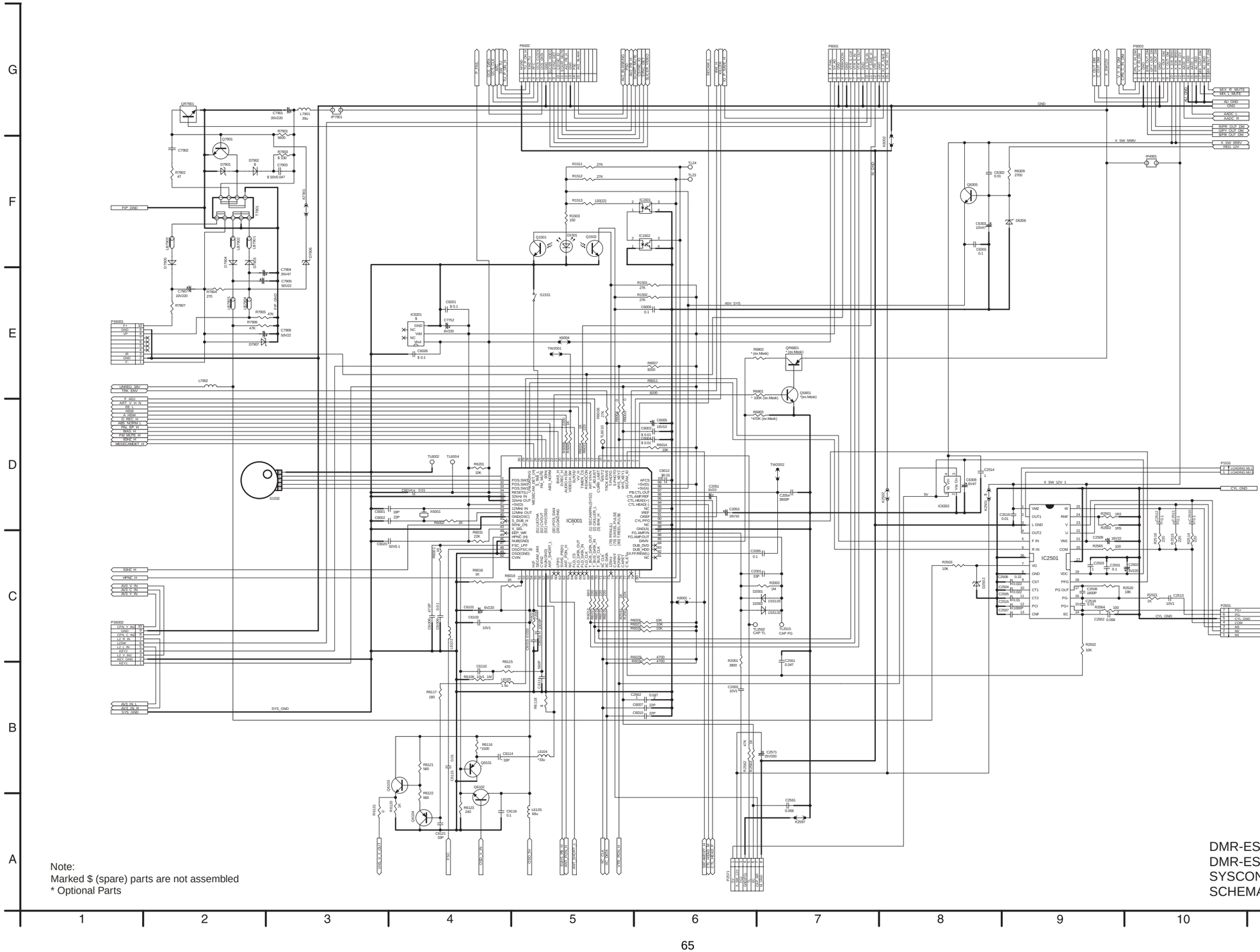
14.4. IO / TUNER


G
F
E
D
C
B
A
1
2
3
4
5
6
7
8
9
10
11
IC3901
JK3901
JK3902
IC3905
IC7401
IC7402
IC7403
IC7804
TU7801 *ENGF7503GF
JK4901
JK4902
JK4903
P7801 *(DVB)
P7802 * (DVB)
P6004 * (DVB)
GND
SCART_MUTE
MIX_R_MUTE
MIX_L_MUTE
AADC_L
AADC_R
AU_GND
CPN_C_IN_DM
V_Y_IN
V_Y_IN_DM
SLICER_VIDEO
CSYNC_IO
SYNC_DET
C_OUT_DM
Y_OUT_DM
R/PR_OUT_DM
G/PY_OUT_DM
B/PB_OUT_DM
IO_GND
AV2_V_IN
AV2_R_C_IN
AV2_G_IN
AV2_B_IN
I2C5_CLK
I2C5_DATA
C_IN
AV2_PB_H
AV2_BLANKING
P50
VHS_OUT_L
VHS_OUT_R
VHS_V_Y_OUT
FM_MUTE_H
X_SW12V
UNREG_38V
X_SW_5R8V
ANT_PON_H
ANT_SHORT_L
SW_TU
AV3_V_IN
AV3_Y_IN
AV3_C_IN
AV3_IN_R
AV3_IN_L
IO_P_SAVE_H
TU_P_ON_H
SIF
AFC
MONO_FROM_TU
RF_5V
MPEG_TU_R
MPEG_TU_L
DECODER_R
DECODER_L
PS_5V
NSW_5V
VIF_5V
TU_5V
Turned Elko

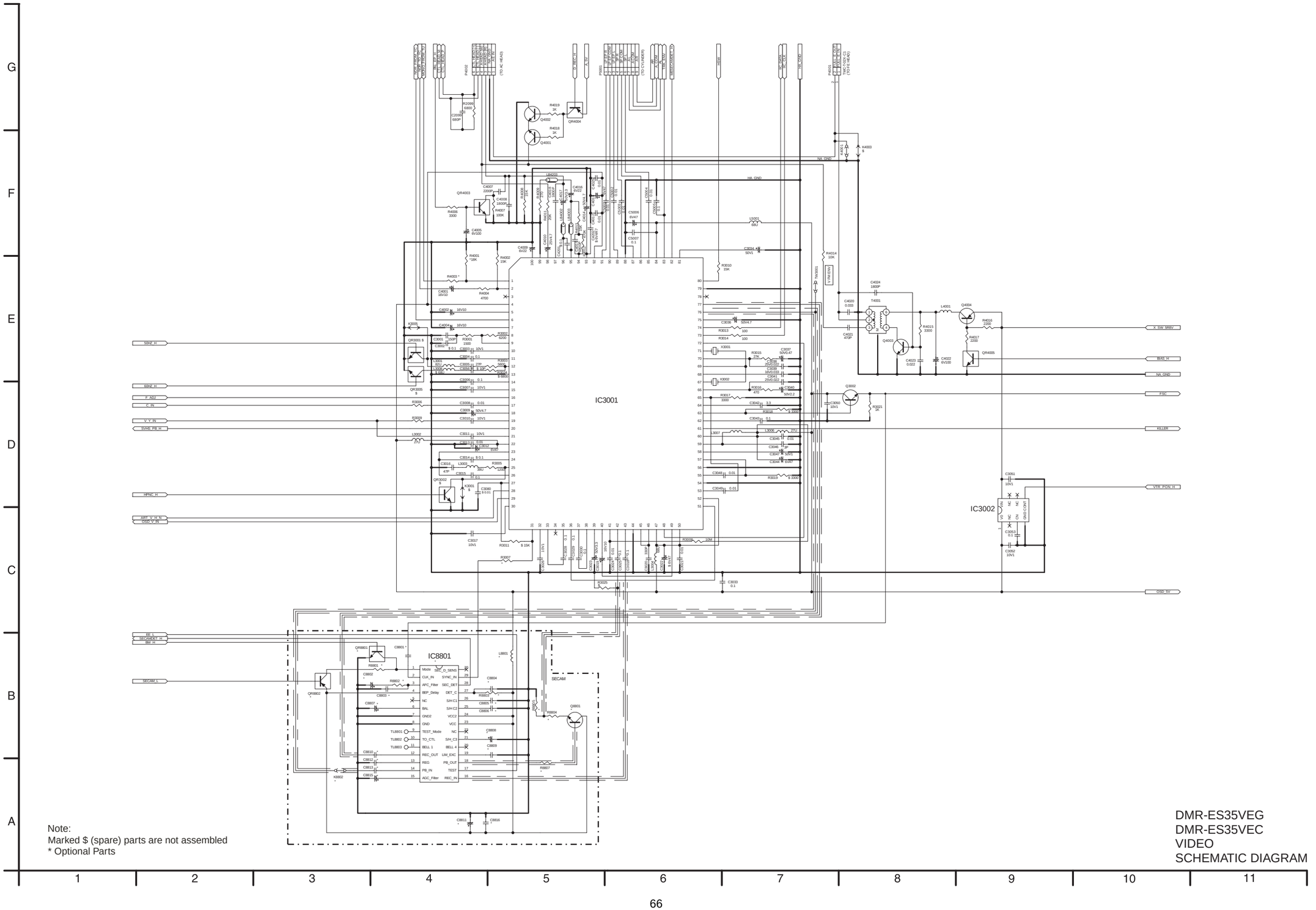
Note:
Marked $ (spare) parts are not assembled
* Optional Parts

DMR-ES35VEG
DMR-ES35VEC
IO / TUNER
SCHEMATIC DIAGRAM

14.5. SYSCON / SERVO / TIMER MAIN



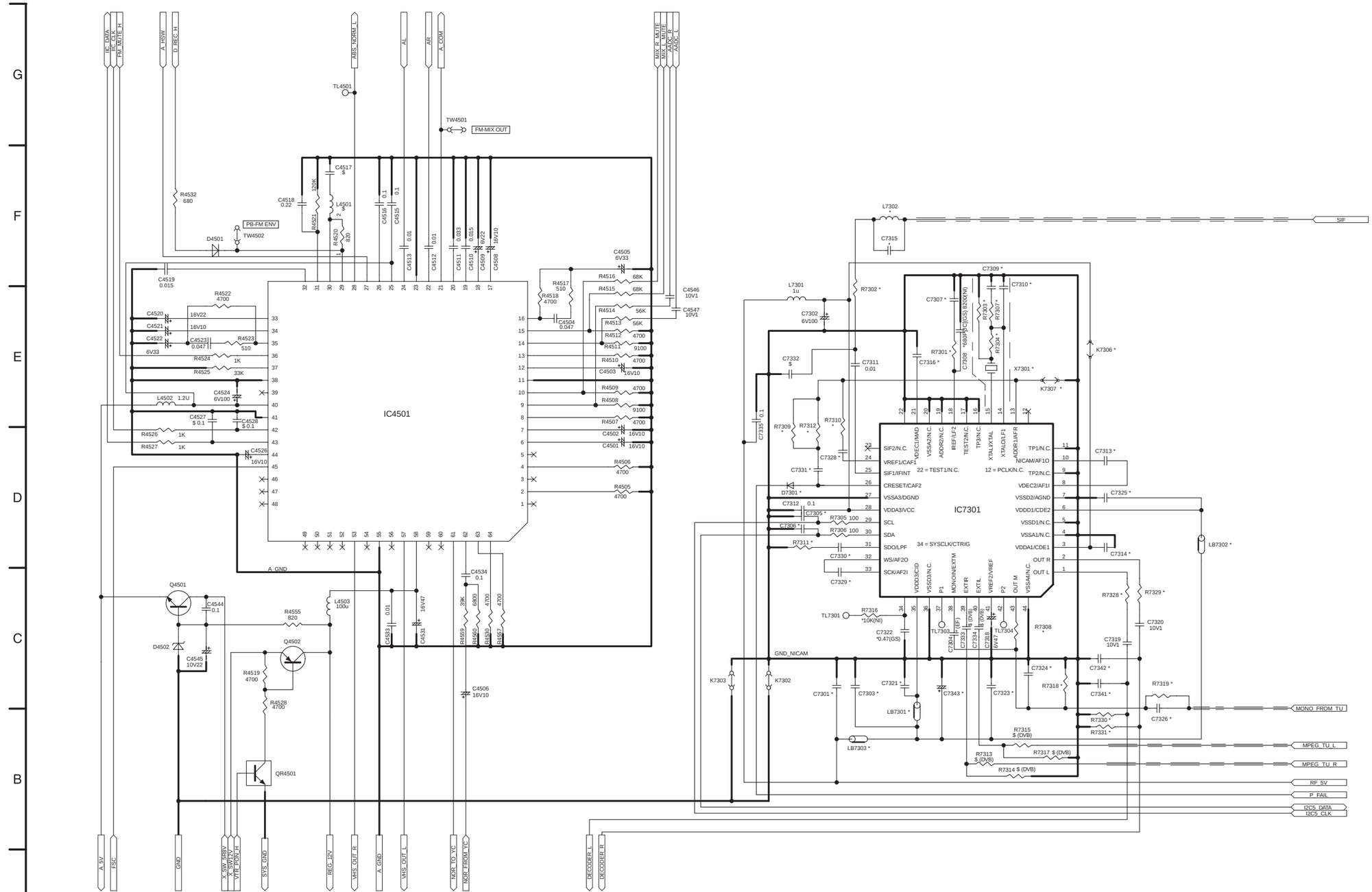
14.6. VIDEO



Note:
Marked $ (spare) parts are not assembled
* Optional Parts

DMR-ES35VEG
DMR-ES35VEC
VIDEO
SCHEMATIC DIAGRAM

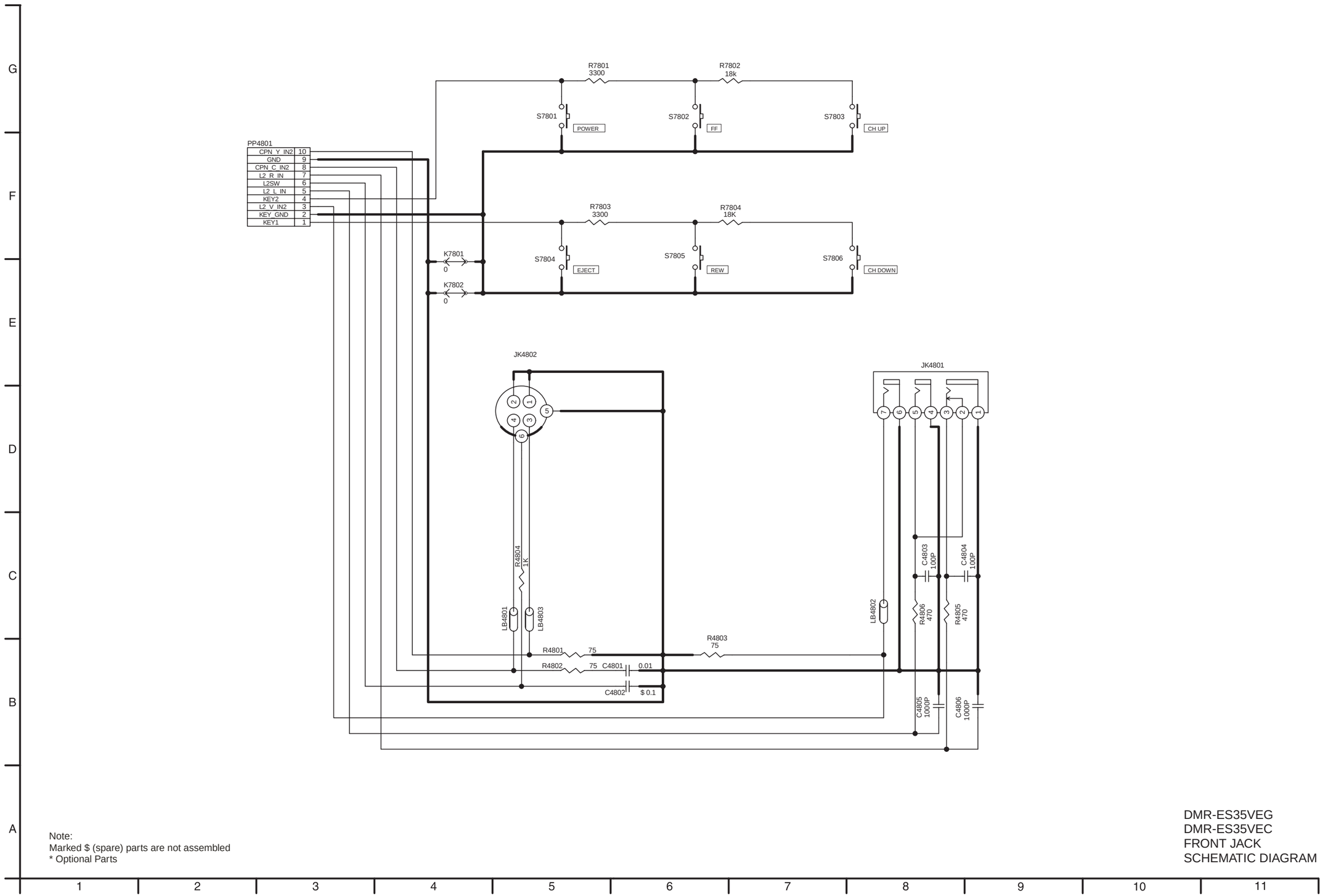
14.7. AUDIO NICAM



Note:
Marked $ (spare) parts are not assembled
* Optional Parts

DMR-ES35VEG
DMR-ES35VEC
AUDIO NICAM
SCHEMATIC DIAGRAM

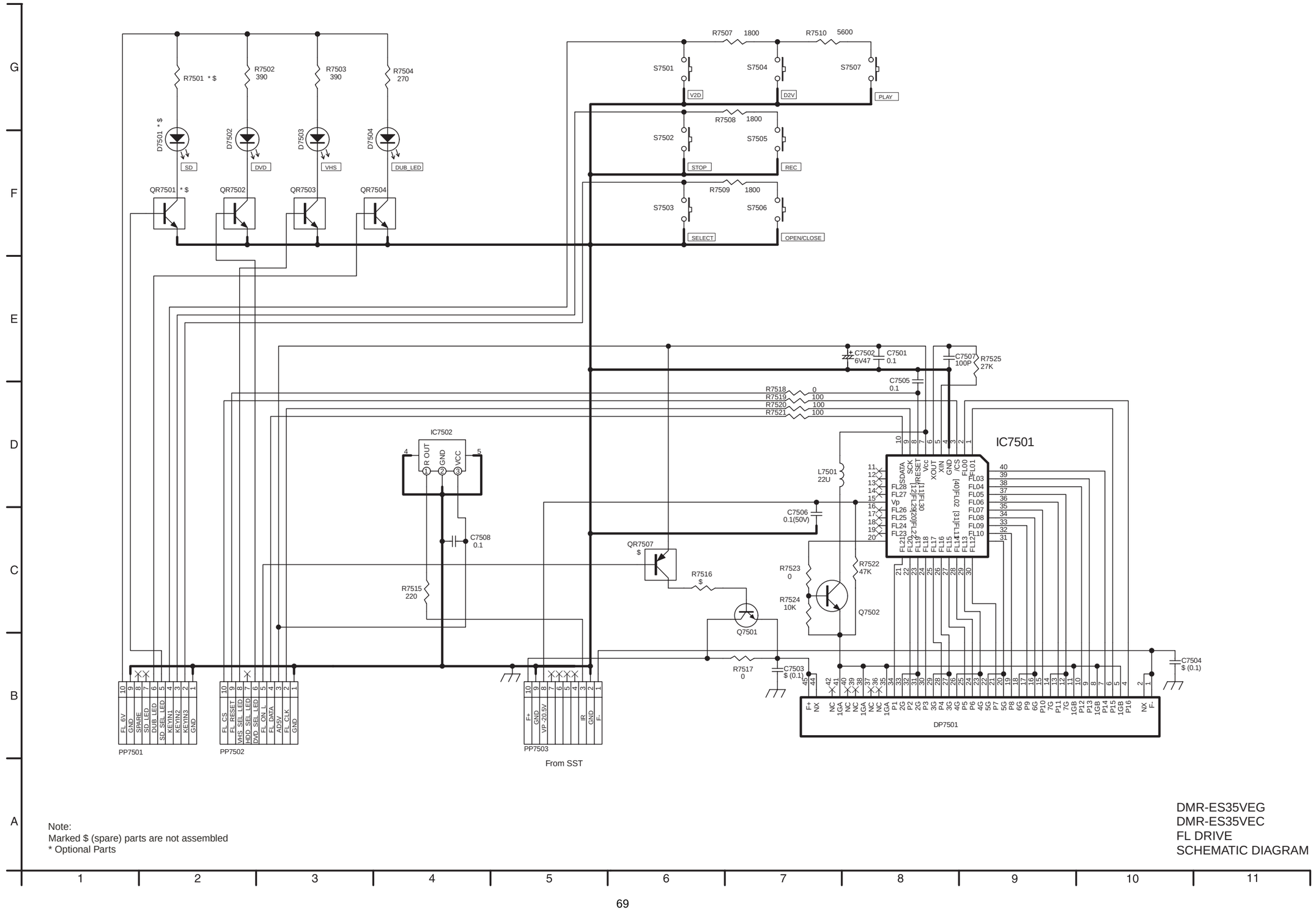
14.8. FRONT JACK



Note:
Marked $ (spare) parts are not assembled
* Optional Parts

DMR-ES35VEG
DMR-ES35VEC
FRONT JACK
SCHEMATIC DIAGRAM

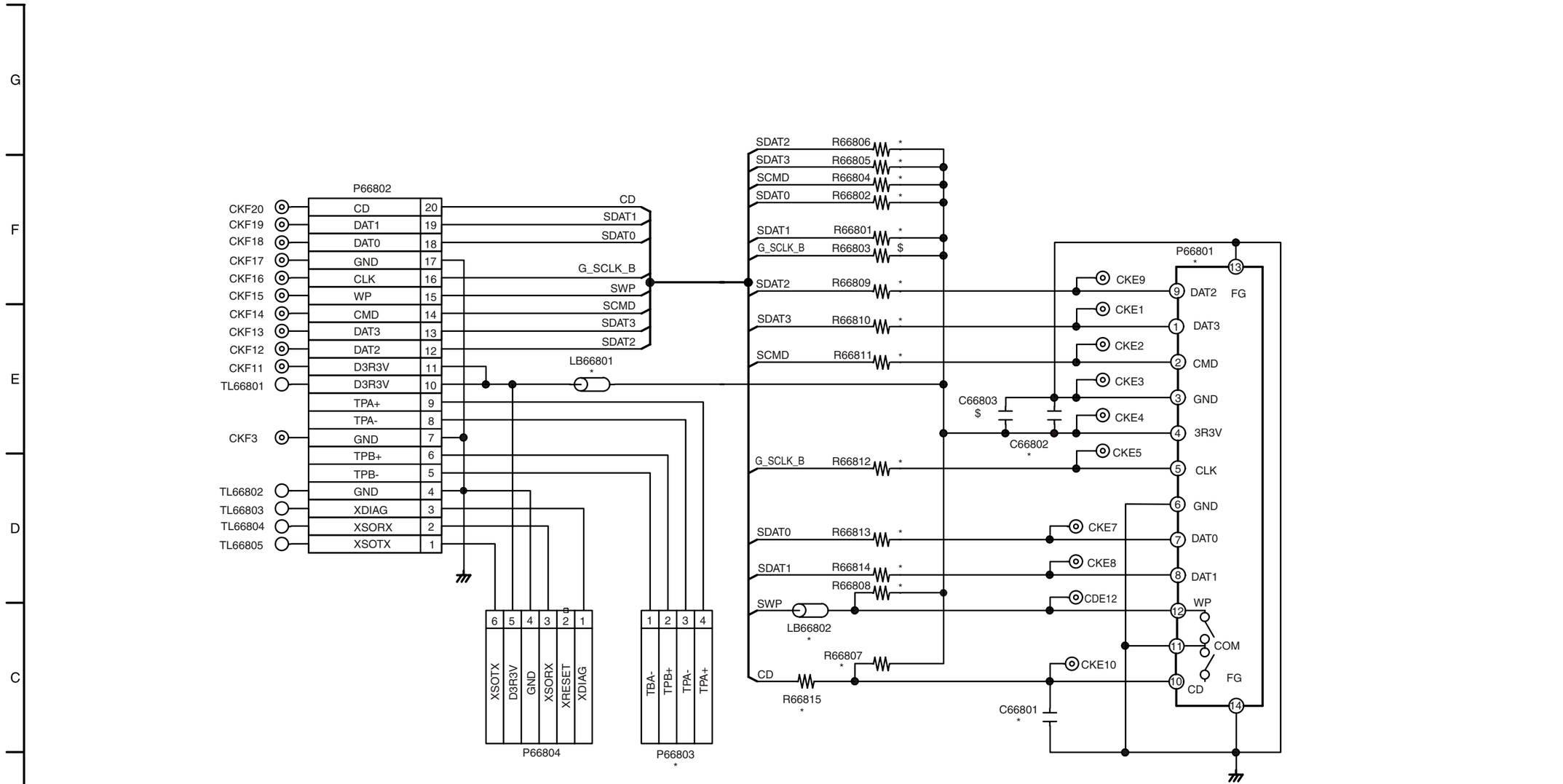
14.9. FL DRIVE



Note:
Marked $ (spare) parts are not assembled
* Optional Parts

DMR-ES35VEG
DMR-ES35VEC
FL DRIVE
SCHEMATIC DIAGRAM

14.10. DV IN

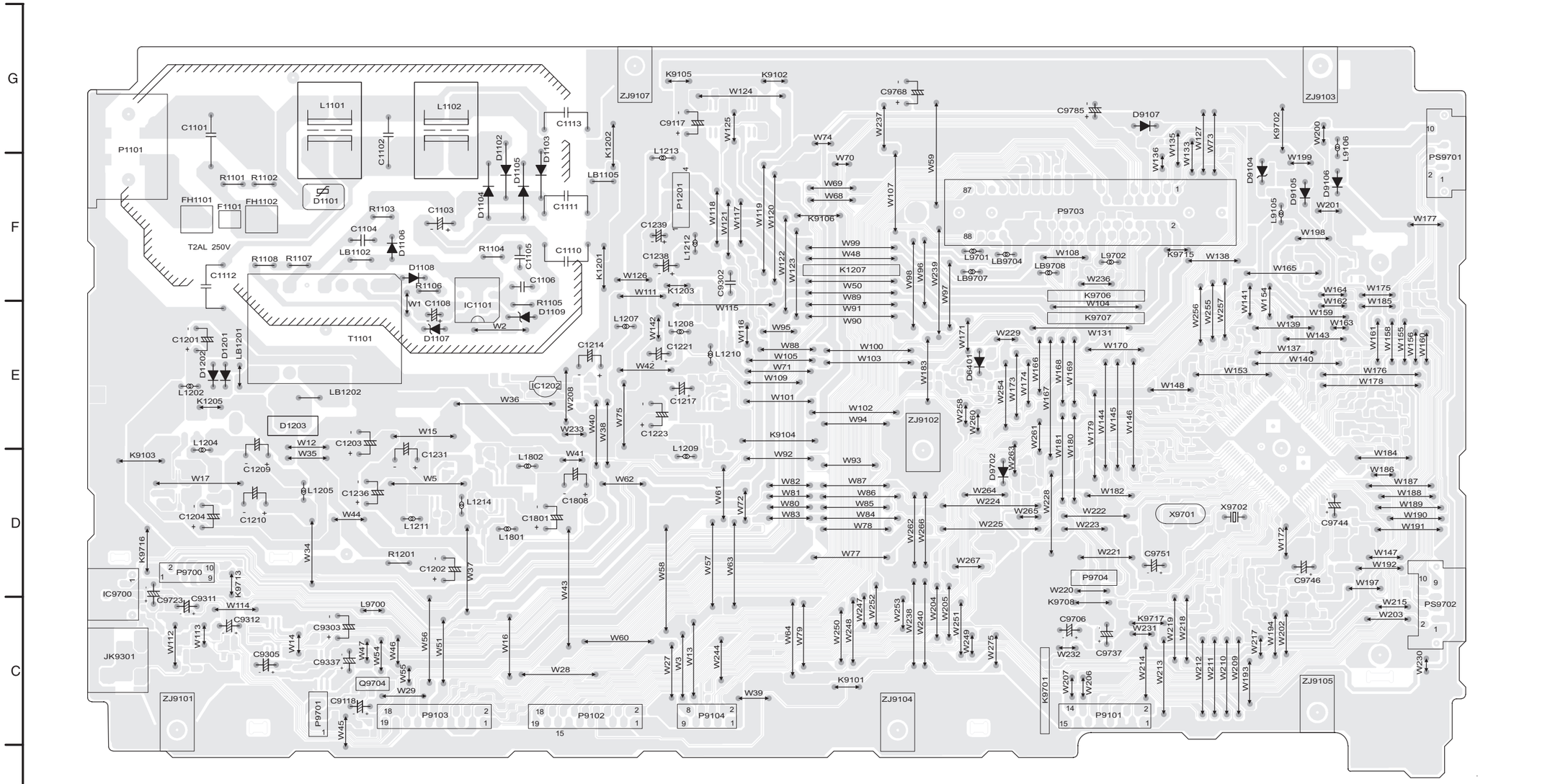


Note:
Marked $ (spare) parts are not assembled
* Optional Parts

DMR-ES35VEG
DMR-ES35VEC
DV IN
SCHEMATIC DIAGRAM

15 PRINTED CIRCUIT BOARD

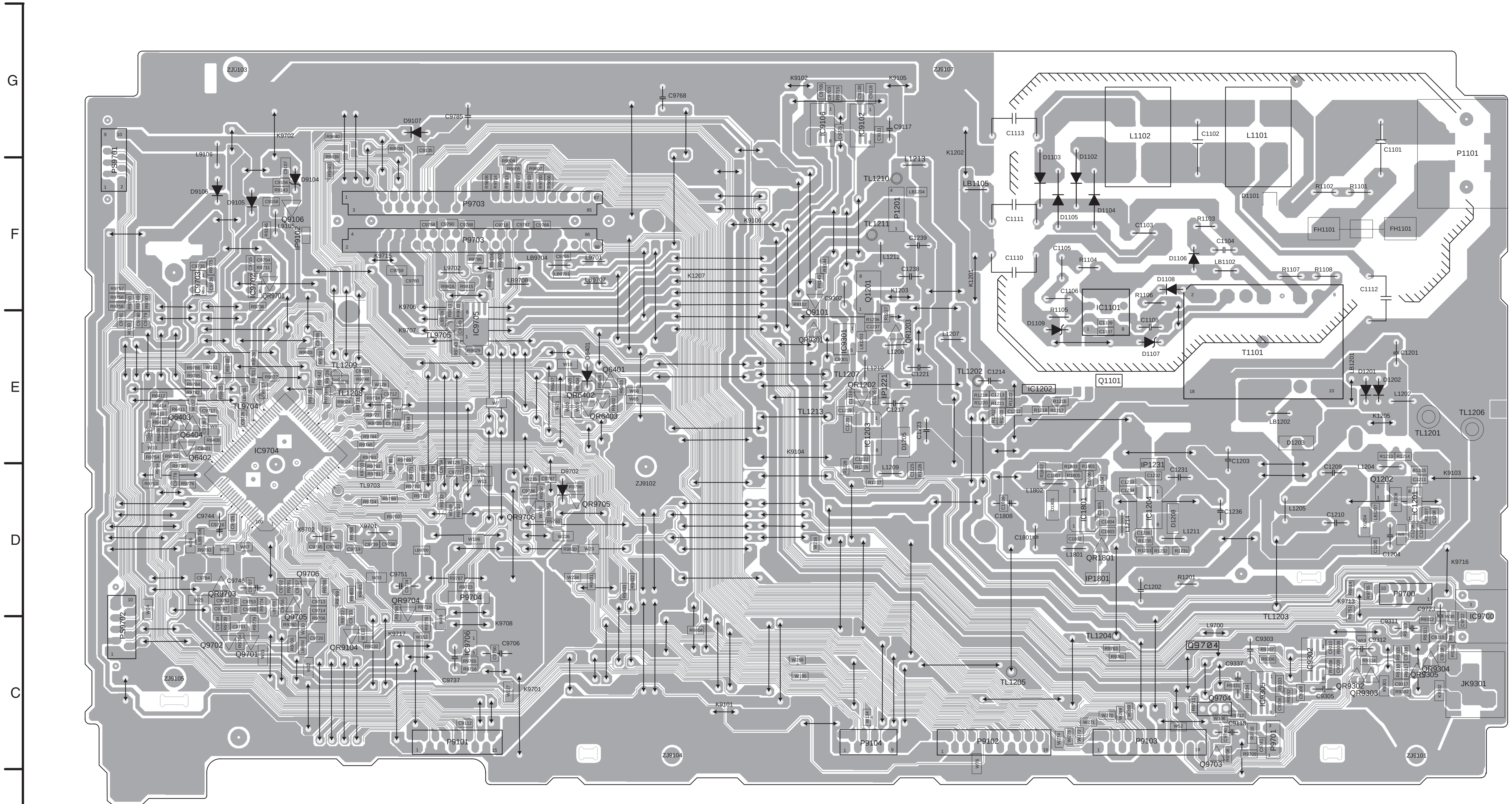
15.1. POWER & DIGITAL I/F P.C.B. (COMPONENT SIDE)



ADRESS INFORMATION					
F1101	E2	P9103	C3	Q9704	C3
		P9104	C5		
IC1101	F4	P9700	D2	T1101	T3
IC1202	E4	P9701	B3		
IC9700	D1	P9703	F8		
		P9704	D8		
P1101	F1				
P1201	F5	PS9701	G11		
P9101	C8	PS9702	C11		
P9102	C5				

DMR-ES35VEG
DMR-ES35VEC
POWER & DIGITAL I/F PCB
COMPONENT SIDE

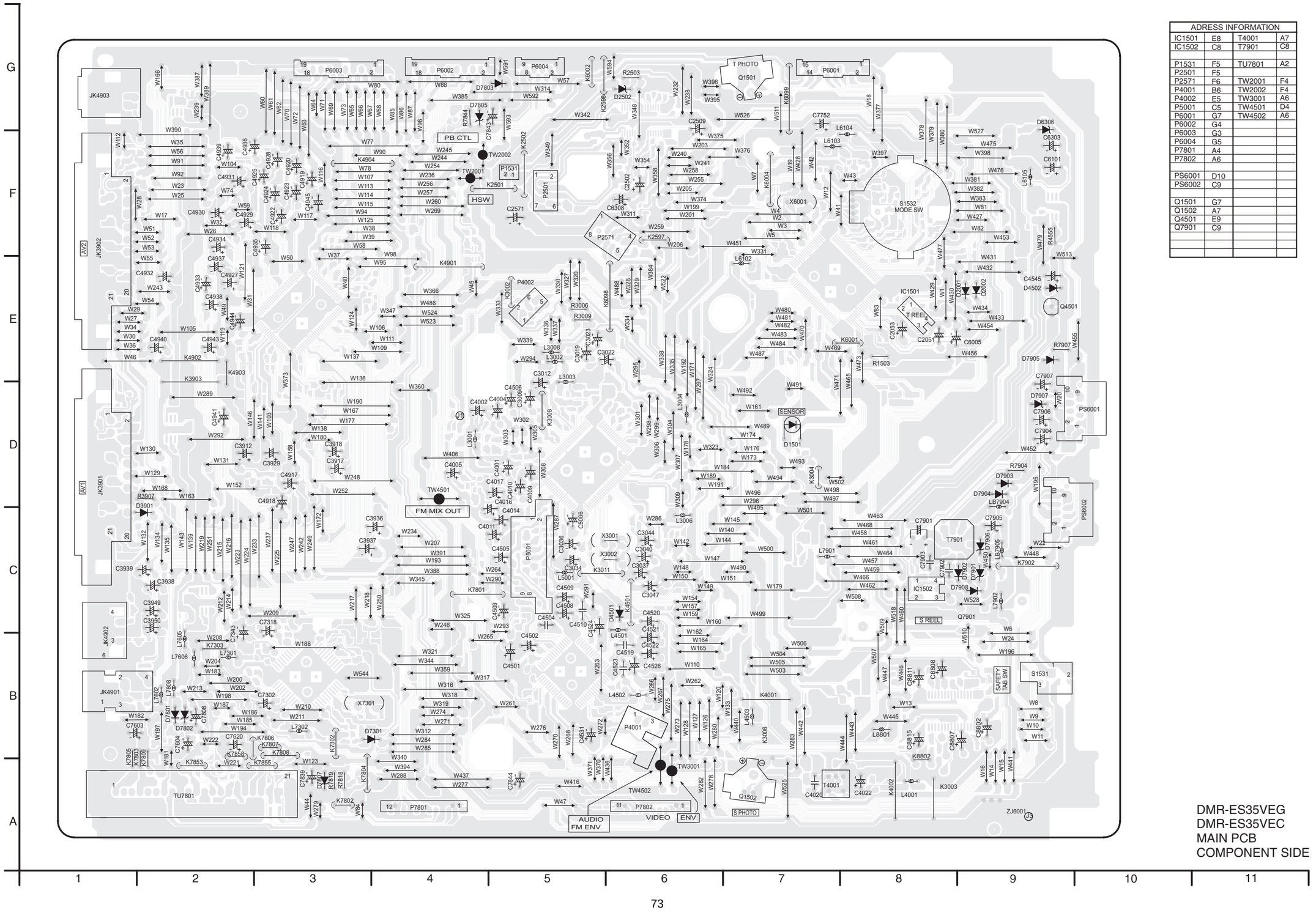
15.2. POWER & DIGITAL I/F P.C.B. (SOLDER SIDE)



ADRESS INFORMATION																			
IC1101	F8	IC31502	F6	IC9700	C11	IP9102	F2	P9703	F4	Q6402	E2	Q9706	D3	QR9303	C10	TL1201	E10	TL1211	F6
IC1201	D10	IC31510	F6	IC9702	F2			P9704	D4	Q6403	E2			QR9304	C10	TL1202	E7	TL1213	E6
IC1202	E8	IC34001	E5	IC9703	F2	P1101	F11			Q6404	E2	QR1202	E6	QR9305	C10	TL1203	D9	TL9703	D3
IC1203	E6	IC35004	E9	IC9704	E2	P1201	F7	PS9701	F1	Q9101	F6	QR1203	E7	QR9701	F2	TL1204	C8	TL9704	E2
IC1204	D8	IC35005	E10	IC9705	E4	P9101	C3	PS9702	C1	Q9106	F2	QR1801	D8	QR9703	D2	TL1205	C7	TL9705	E3
IC15001	C8	IC9102	F6	IC9706	C4	P9102	C7			Q9701	C2	QR6402	E4	QR9704	D3	TL1206	E11		
IC15002	D8	IC9106	F6			P9103	C8	Q1101	E8	Q9702	C2	QR6403	E5	QR9705	D4	TL1207	E6		
IC15003	D9	IC9301	E6	IP1221	E7	P9104	C6	Q1201	F6	Q9703	C9	QR9104	C3	QR9706	D4	TL1208	E3		
IC15004	C10	IC9302	C10	IP1231	D8	P9700	D10	Q1202	D10	Q9704	C9	QR9301	E6			TL1209	E3		
IC1801	D8	IC9305	C9	IP1801	D8	P9701	C9	Q6401	E5	Q9705	D2	QR9302	C10	T1101	E9	TL1210	F7		

DMR-ES35VEG
DMR-ES35VEC
POWER & DIGITAL I/F PCB
SOLDER SIDE

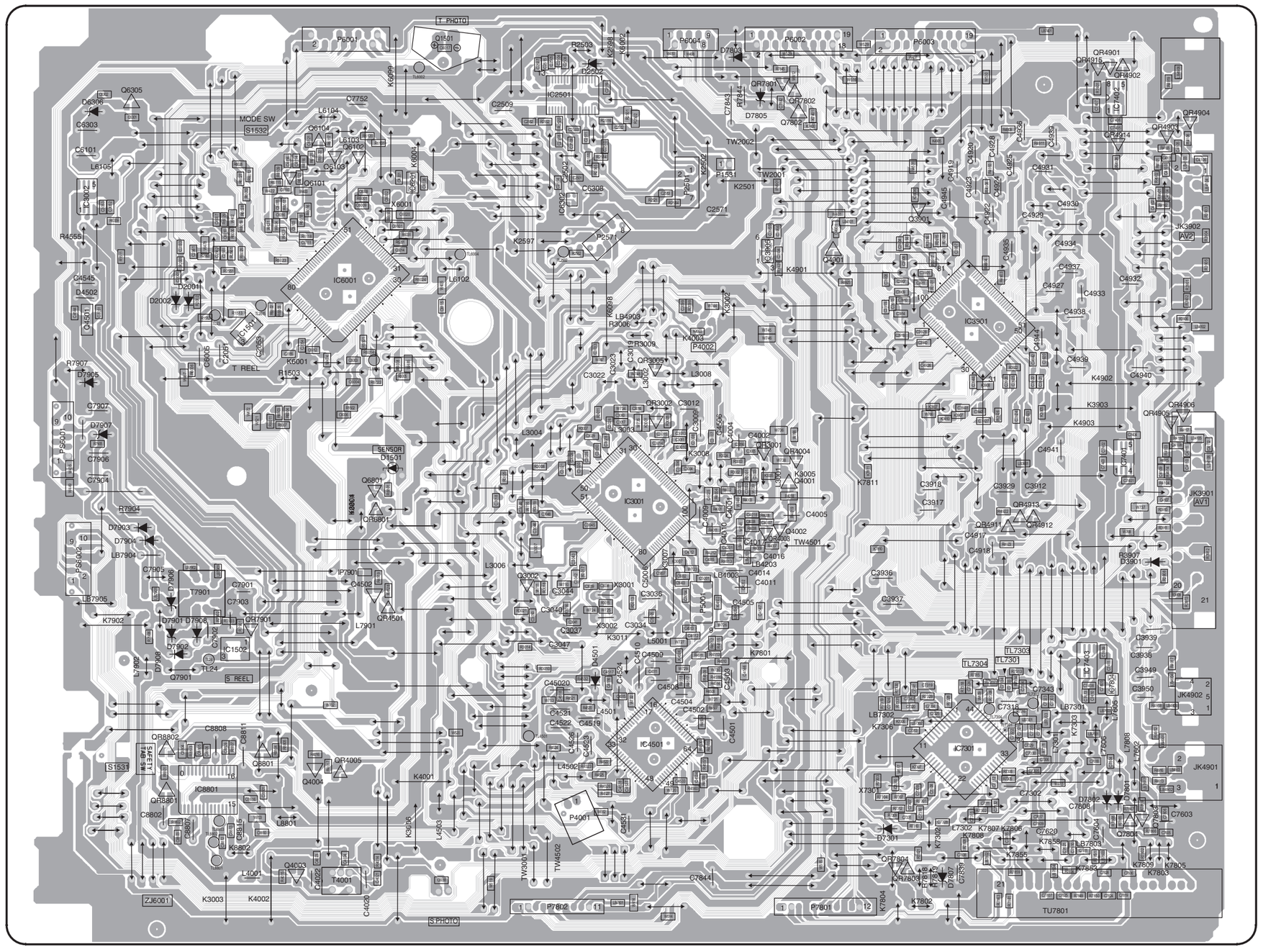
15.3. MAIN P.C.B. (COMPONENT SIDE)



ADRESS INFORMATION			
IC1501	E8	T4001	A7
IC1502	C8	T7901	C8
P1531	F5	TU7801	A2
P2501	F5		
P2571	F6	TW2001	F4
P4001	B6	TW2002	F4
P4002	E5	TW3001	A6
P5001	C5	TW4501	D4
P6001	G7	TW4502	A6
P6002	G4		
P6003	G3		
P6004	G5		
P7801	A4		
P7802	A6		
PS6001	D10		
PS6002	C9		
Q1501	G7		
Q1502	A7		
Q4501	E9		
Q7901	C9		

DMR-ES35VEG
DMR-ES35VEC
MAIN PCB
COMPONENT SIDE

15.4. MAIN P.C.B. (SOLDER SIDE)

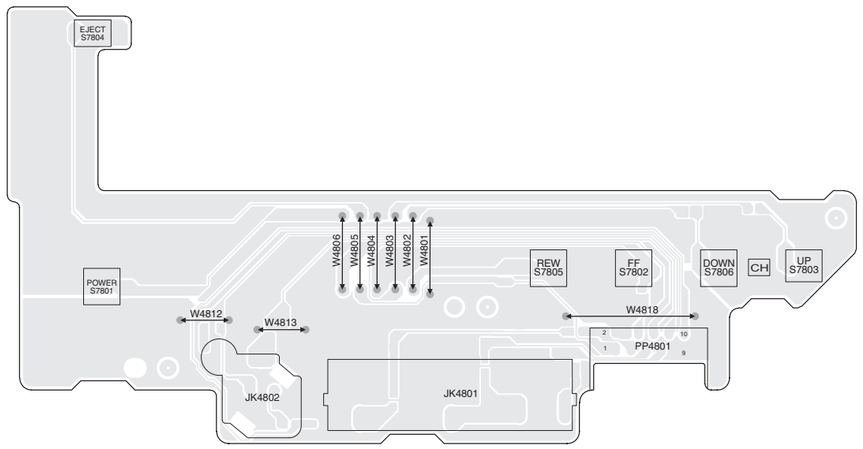


ADRESS INFORMATION			
IC1501	E2	QR3001	D6
IC1502	C2	QR3002	E5
IC2501	G5	QR3005	E5
IC3001	D5	QR4003	D6
IC3002	F1	QR4004	D7
IC3901	E8	QR4005	B3
IC3905	F6	QR4501	C4
IC4501	B5	QR4901	G9
IC6001	E3	QR4902	G9
IC6201	F4	QR4903	F9
IC6302	F5	QR4904	F9
IC7301	B8	QR4905	D9
IC7401	D9	QR4906	E9
IC7402	G9	QR4911	D8
IC7403	C9	QR4912	D8
IC7804	C9	QR4913	D8
IC8801	B2	QR4914	F9
		QR4915	G9
IP4901	F6	QR6801	D3
IP7901	C3	QR7801	G6
		QR7802	G7
JK3901	D9	QR7803	A7
JK3902	F9	QR7804	A7
JK4901	B9	QR7901	C3
JK4902	C9	QR8801	B2
		QR8802	B2
P1531	F6		
P2501	F6	T4001	A3
P2571	F5	T7901	C2
P4001	B5	TL23	E2
P4002	E6	TL24	C2
P5001	C6	TL2502	F5
P6001	G3	TL2515	E3
P6002	G6	TL4501	B5
P6003	G7	TL6002	G4
P6004	G6	TL6004	F4
P7801	A7	TL6010	F3
P7802	A5	TL7301	C8
PS6001	D2	TL7301	B8
PS6002	C1	TL7303	C8
		TL7303	C8
Q1501	G4	TL7304	C8
Q3002	C5	TL7304	B8
Q3901	F7	TL8801	A2
Q4001	D7	TL8802	B2
Q4002	D6	TL8803	B2
Q4003	A3		
Q4004	B3	TU7801	A8
Q4501	E1		
Q4502	C3	TW2001	F6
Q4901	F7	TW2002	F6
Q6101	F3	TW3001	A5
Q6102	F3	TW4501	D7
Q6103	F3	TW4502	A5
Q6104	F3		
Q6305	G2		
Q6801	D3		
Q7802	F6		
Q7803	B9		
Q7804	B9		
Q7901	C2		
Q8801	B3		

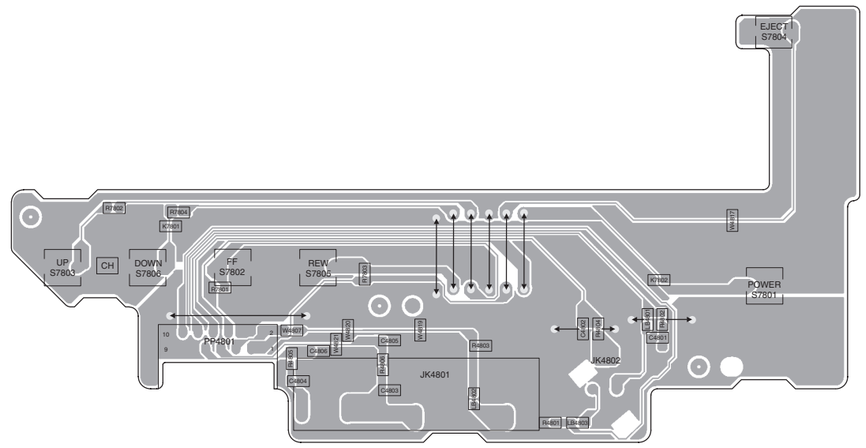
DMR-ES35VEG
DMR-ES35VEC
MAIN PCB
SOLDER SIDE

15.5. FRONT JACK P.C.B.

FRONT JACK COMPONENT SIDE



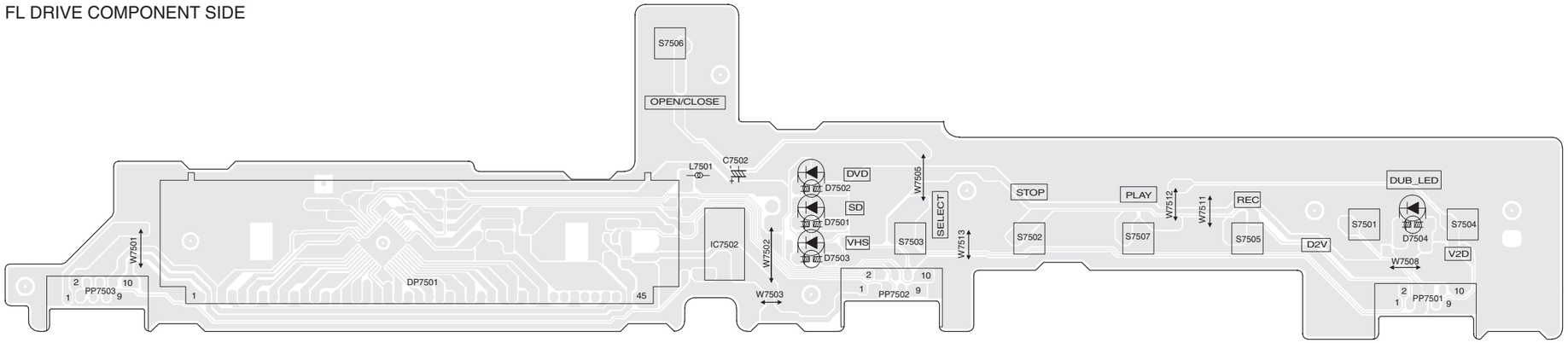
FRONT JACK SOLDER SIDE



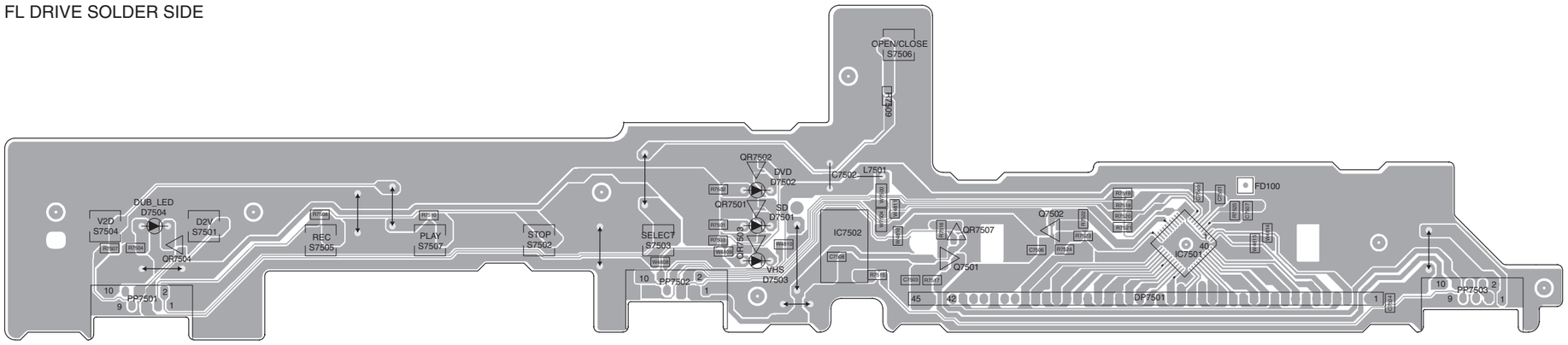
DMR-ES35VEG
DMR-ES35VEC
FRONT JACK PCB
COMPONENT SIDE / SOLDER SIDE

15.6. FL DRIVE P.C.B.

FL DRIVE COMPONENT SIDE



FL DRIVE SOLDER SIDE

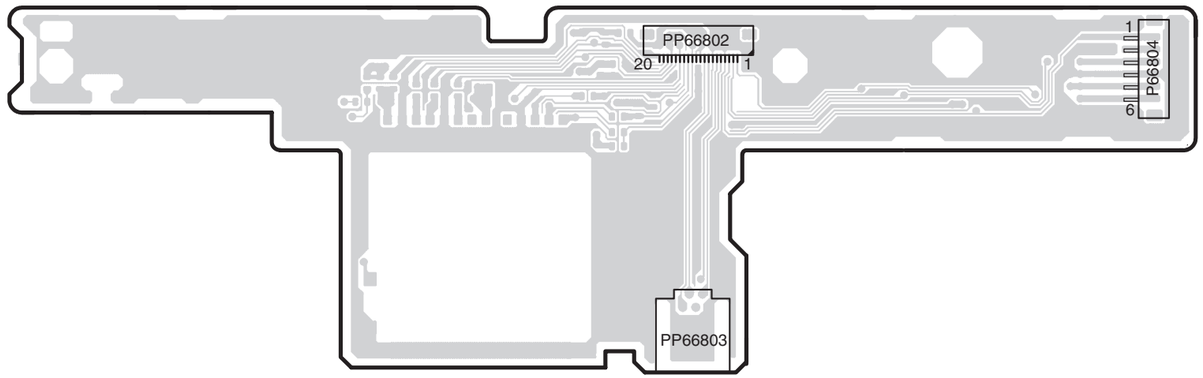


ADRESS INFORMATION			
IC7502	F6/C7	Q7501	C7
IC7501	C9	Q7502	C8
DP7501	F4/C8	QR7501	D6
PP7501	E10/C2	QR7503	C6
PP7502	E7/C6	QR7504	C3
PP7503	E2/C11	QR7507	C8

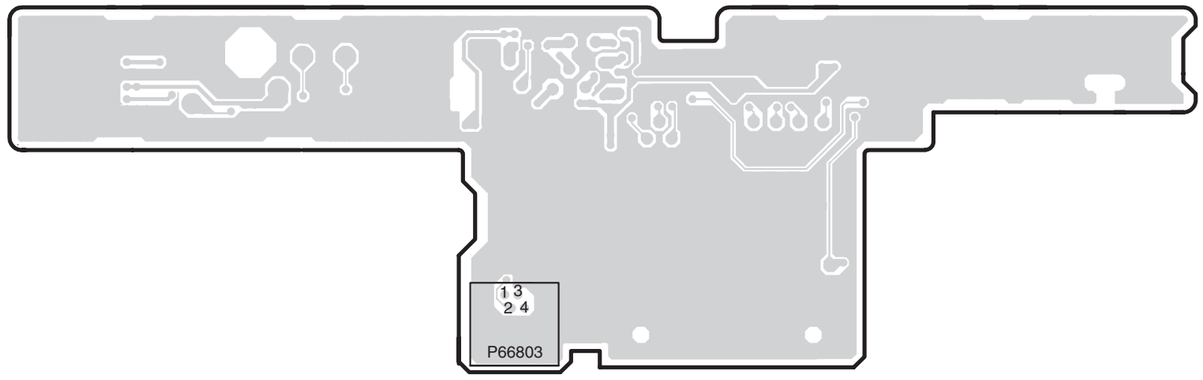
DMR-ES35VEG
DMR-ES35VEC
FL DRIVE PCB
COMPONENT SIDE / SOLDER SIDE

15.7. DV IN P.C.B.

COMPONENT SIDE



SOLDER SIDE



DMR-ES35VEG
DMR-ES35VEC
DV IN PCB
COMPONENT SIDE / SOLDER SIDE

16 APPENDIX FOR SCHEMATIC DIAGRAM

16.1. VOLTAGE AND WAVEFORM CHART

NOTE:

- Indicated voltage values are the standard values for the unit measured by the DC electronic circuit tester (high-impedance) with the chassis taken as standard.

  Therefore, there may exist some errors in the voltage values, depending on the internal impedance of the DC circuit tester.

16.1.1. VOLTAGE CHART (IC1201 - IC2501)

Ref.No.	IC1201									
Mode	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**		
Stop	12,32	4,45	1,20	1,26	0,75	0,00	6,54	12,30		
Play	12,31	4,45	1,20	1,26	0,75	0,00	6,54	12,30		
Rec.	**12,31**	**4,45**	**1,19**	**1,26**	**0,72**	**0,00**	**6,54**	**12,29**		

Ref.No.	IC1203									
Mode	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**		
Stop	12,32	0,03	1,29	4,16	0,00	1,18	0,76	5,21		
Play	12,32	0,03	1,29	4,16	0,00	1,25	0,76	5,21		
Rec.	**12,31**	**0,03**	**1,29**	**4,15**	**0,00**	**1,25**	**0,76**	**5,21**		

Ref.No.	IC1204									
Mode	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**		
Stop	12,32	0,04	1,28	4,15	0,04	1,11	0,76	3,84		
Play	12,31	0,04	1,28	4,14	0,04	1,11	0,75	3,84		
Rec.	**12,31**	**0,05**	**1,28**	**4,14**	**0,04**	**1,10**	**0,75**	**3,84**		

Ref.No.	IC2501									
Mode	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
Stop	12,32	0,00	0,00	0,00	0,00	0,00	16,08	0,00	0,00	1,02
Play	12,32	0,00	0,00	0,00	0,00	0,00	16,08	0,00	0,00	1,02
Rec.	**12,32**	**0,00**	**0,00**	**0,00**	**0,00**	**0,00**	**16,08**	**0,00**	**0,00**	**1,02**

Ref.No.	IC2501									
Mode	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**
Stop	3,82	0,00	0,05	5,05	2,47	2,47	2,47	2,47	5,02	0,75
Play	3,82	0,00	0,00	5,05	2,47	2,47	2,47	2,47	5,02	0,75
Rec.	**3,82**	**0,00**	**0,00**	**5,05**	**2,47**	**2,47**	**2,47**	**2,47**	**5,02**	**0,75**

Ref.No.	IC2501									
Mode	**21**	**22**	**23**	**24**	**25**					
Stop	12,32	0,74	0,74	0,00	0,74					
Play	12,32	0,74	0,74	0,00	0,74					
Rec.	**12,32**	**0,74**	**0,74**	**0,00**	**0,74**					

16.1.2. VOLTAGE CHART (IC3001-IC9706, Q1201-Q6801, QR1202-QR7901, P6001-P9703)

Ref.No.	IC3001									
Mode	1	2	3	4	5	6	7	8	9	10
Stop	0,00	0,00	0,06	5,12	2,09	2,59	2,83	1,94	1,86	2,03
Play	0,00	0,00	0,06	5,12	2,09	2,59	2,83	1,94	1,86	2,03
Rec.	**0,00**	**0,00**	**0,06**	**5,12**	**2,09**	**2,59**	**2,83**	**1,94**	**1,86**	**2,03**

Ref.No	IC3001									
Mode	11	12	13	14	15	16	17	18	19	20
Stop	2,62	1,61	0,00	2,77	2,79	0,00	2,79	1,97	2,78	0,00
Play	2,62	1,61	0,00	2,77	2,79	0,00	2,79	1,97	2,78	0,00
Rec.	**2,62**	**1,61**	**0,00**	**2,77**	**2,79**	**0,00**	**2,79**	**1,97**	**2,78**	**0,00**

Ref.No.	IC3001									
Mode	21	22	23	24	25	26	27	28	29	30
Stop	2,79	5,01	2,31	0,00	2,12	2,95	0,42	0,00	2,10	2,89
Play	2,79	5,01	2,31	0,00	2,12	2,95	0,42	0,00	2,10	2,89
Rec.	**2,79**	**5,01**	**2,31**	**0,00**	**2,12**	**2,95**	**0,42**	**0,00**	**2,10**	**2,89**

Ref.No.	IC3001									
Mode	31	32	33	34	35	36	37	38	39	40
Stop	0,35	2,31	2,05	1,77	2,98	2,27	2,98	2,17	1,45	2,10
Play	0,35	2,31	2,05	1,77	2,98	2,27	2,98	2,17	1,45	2,10
Rec.	**0,35**	**2,31**	**2,05**	**1,77**	**2,98**	**2,27**	**2,98**	**2,17**	**1,45**	**2,10**

Ref.No.	IC3001									
Mode	41	42	43	44	45	46	47	48	49	50
Stop	2,72	1,97	2,12	0,00	3,13	3,13	5,07	0,14	3,12	5,07
Play	2,72	1,97	2,12	0,00	3,13	3,13	5,07	0,14	3,12	5,07
Rec.	**2,72**	**1,97**	**2,12**	**0,00**	**3,13**	**3,13**	**5,07**	**0,14**	**3,12**	**5,07**

Ref.No.	IC3001									
Mode	51	52	53	54	55	56	57	58	59	60
Stop	2,04	5,07	2,60	0,00	2,08	0,00	2,17	1,94	5,05	5,05
Play	2,04	5,07	2,60	0,00	2,08	0,00	2,17	1,94	5,05	5,05
Rec.	**2,04**	**5,07**	**2,60**	**0,00**	**2,08**	**0,00**	**2,17**	**1,94**	**5,05**	**5,05**

Ref.No.	IC3001									
Mode	61	62	63	64	65	66	67	68	69	70
Stop	4,12	2,29	2,20	2,26	2,20	2,26	0,28	1,27	2,01	2,70
Play	4,12	2,29	2,20	2,26	2,20	2,26	0,00	1,27	2,01	2,70
Rec.	**4,12**	**2,29**	**2,20**	**2,26**	**2,20**	**2,26**	**0,00**	**1,27**	**2,01**	**2,70**

Ref.No.	IC3001									
Mode	71	72	73	74	75	76	77	78	79	80
Stop	2,18	0,14	4,30	4,25	2,75	2,23	2,84	0,02	0,02	2,35
Play	2,18	0,14	4,30	4,25	2,75	2,23	2,84	0,02	0,02	2,35
Rec.	**2,18**	**0,14**	**4,30**	**4,25**	**2,75**	**2,23**	**2,84**	**0,02**	**0,02**	**2,35**

Ref.No.	IC3001									
Mode	81	82	83	84	85	86	87	88	89	90
Stop	4,67	0,00	2,97	5,03	2,28	2,28	2,28	0,00	2,28	2,28
Play	4,67	0,00	2,97	5,03	2,28	2,28	2,28	0,00	2,28	2,28
Rec.	**4,67**	**0,00**	**2,97**	**5,03**	**2,28**	**2,28**	**2,28**	**0,00**	**2,28**	**2,28**

Ref.No.	IC3001									
Mode	91	92	93	94	95	96	97	98	99	100
Stop	2,28	5,12	1,60	2,54	2,52	2,49	0,00	2,24	0,00	2,58
Play	2,28	5,12	1,60	2,54	2,52	2,49	0,00	2,24	0,00	2,58
Rec.	**2,28**	**5,12**	**1,60**	**2,54**	**2,52**	**2,49**	**0,00**	**2,24**	**0,00**	**2,58**

Ref.No.	IC3002									
Mode	1	2	3	4	5	6	7	8		
Stop	5,14	0,00	1,28	0,00	4,87	0,00	0,00	5,65		
Play	5,14	0,00	1,28	0,00	4,87	0,00	0,00	5,65		
Rec.	**5,14**	**0,00**	**1,28**	**0,00**	**4,87**	**0,00**	**0,00**	**5,65**		

Ref.No.	IC3901									
Mode	1	2	3	4	5	6	7	8	9	10
Stop	2,01	2,51	1,51	0,00	1,57	4,92	1,66	4,91	0,00	2,77
Play	2,01	2,51	1,51	0,00	1,57	4,92	1,66	4,91	0,00	2,77
Rec.	**2,01**	**2,51**	**1,51**	**0,00**	**1,57**	**4,92**	**1,66**	**4,91**	**0,00**	**2,77**

Ref.No	IC3901									
Mode	11	12	13	14	15	16	17	18	19	20
Stop	1,65	0,00	0,00	1,65	1,69	1,80	0,00	0,00	1,62	1,66
Play	1,65	0,00	0,00	1,65	1,69	1,80	0,00	0,00	1,62	1,66
Rec.	**1,65**	**0,00**	**0,00**	**1,65**	**1,69**	**1,80**	**0,00**	**0,00**	**1,62**	**1,66**

Ref.No.	IC3901									
Mode	21	22	23	24	25	26	27	28	29	30
Stop	0,00	1,74	1,67	1,70	4,90	1,49	0,00	1,49	0,00	2,01
Play	0,00	1,74	1,67	1,70	4,90	1,49	0,00	1,49	0,00	2,01
Rec.	**0,00**	**1,74**	**1,67**	**1,70**	**4,90**	**1,49**	**0,00**	**1,49**	**0,00**	**2,01**

Ref.No.	IC3901									
Mode	31	32	33	34	35	36	37	38	39	40
Stop	1,56	0,00	1,57	0,00	2,04	0,00	1,57	0,00	1,59	4,92
Play	1,56	0,00	1,57	0,00	2,04	0,00	1,57	0,00	1,59	4,92
Rec.	**1,56**	**0,00**	**1,57**	**0,00**	**2,04**	**0,00**	**1,57**	**0,00**	**1,59**	**4,92**

Ref.No.	IC3901									
Mode	41	42	43	44	45	46	47	48	49	50
Stop	1,55	4,92	2,00	0,00	2,00	11,78	2,02	2,00	4,48	4,48
Play	1,55	4,92	2,00	0,00	2,00	11,78	2,02	2,00	4,48	4,48
Rec.	**1,55**	**4,92**	**2,00**	**0,00**	**2,00**	**11,78**	**2,02**	**2,00**	**4,48**	**4,48**

Ref.No.	IC3901									
Mode	51	52	53	54	55	56	57	58	59	60
Stop	4,44	4,45	4,45	4,45	4,45	4,45	9,00	4,45	4,45	4,45
Play	4,44	4,45	4,45	4,45	4,45	4,45	9,00	4,45	4,45	4,45
Rec.	**4,44**	**4,45**	**4,45**	**4,45**	**4,45**	**4,45**	**9,00**	**4,45**	**4,45**	**4,45**

Ref.No.	IC3901									
Mode	61	62	63	64	65	66	67	68	69	70
Stop	4,45	4,45	4,45	4,45	9,01	0,00	0,00	0,00	0,00	0,00
Play	4,45	4,45	4,45	4,45	9,01	0,00	0,00	0,00	0,00	0,00
Rec.	**4,45**	**4,45**	**4,45**	**4,45**	**9,01**	**0,00**	**0,00**	**0,00**	**0,00**	**0,00**

Ref.No.	IC3901									
Mode	71	72	73	74	75	76	77	78	79	80
Stop	4,50	4,50	4,50	4,50	0,00	4,50	9,62	4,50	4,50	0,00
Play	4,50	4,50	4,50	4,50	0,00	4,50	9,62	4,50	4,50	0,00
Rec.	**4,50**	**4,50**	**4,50**	**4,50**	**0,00**	**4,50**	**9,62**	**4,50**	**4,50**	**0,00**

Ref.No.	IC3901									
Mode	81	82	83	84	85	86	87	88	89	90
Stop	2,08	4,87	1,44	4,92	2,02	4,46	4,52	4,66	4,52	4,92
Play	2,08	4,87	1,44	4,92	2,02	4,46	4,52	4,66	4,52	4,92
Rec.	**2,08**	**4,87**	**1,44**	**4,92**	**2,02**	**4,46**	**4,52**	**4,66**	**4,52**	**4,92**

Ref.No.	IC3901									
Mode	91	92	93	94	95	96	97	98	99	100
Stop	2,02	3,19	2,09	4,92	2,01	0,00	2,04	0,00	2,01	2,45
Play	2,02	3,19	2,09	4,92	2,01	0,00	2,04	0,00	2,01	2,45
Rec.	**2,02**	**3,19**	**2,09**	**4,92**	**2,01**	**0,00**	**2,04**	**0,00**	**2,01**	**2,45**

Ref.No.	IC3905									
Mode	1	2	3	4	5	6				
Stop	0,04	2,06	4,92	2,83	0,00	2,81				
Play	0,04	2,06	4,92	2,83	0,00	2,81				
Rec.	**0,04**	**2,06**	**4,92**	**2,83**	**0,00**	**2,81**				

Ref.No.	IC4501									
Mode	1	2	3	4	5	6	7	8	9	10
Stop	2,44	0,00	2,44	0,00	0,00	2,55	2,05	0,00	0,00	0,00
Play	2,44	0,00	2,44	0,00	0,00	2,55	2,05	0,00	0,00	0,00
Rec.	**2,44**	**0,00**	**2,44**	**0,00**	**0,00**	**2,55**	**2,05**	**0,00**	**0,00**	**0,00**

Ref.No	IC4501									
Mode	11	12	13	14	15	16	17	18	19	20
Stop	0,00	2,05	0,00	0,00	0,00	2,50	0,73	2,55	2,55	2,10
Play	0,00	2,05	0,00	0,00	0,00	2,52	0,73	2,55	2,55	2,10
Rec.	**0,00**	**2,05**	**0,00**	**0,00**	**0,00**	**2,52**	**0,73**	**2,55**	**2,55**	**2,10**

Ref.No.	IC4501									
Mode	21	22	23	24	25	26	27	28	29	30
Stop	2,10	2,10	0,00	2,10	5,11	2,13	0,00	4,33	1,86	1,79
Play	2,10	2,10	0,00	2,10	5,11	2,13	0,00	4,33	1,86	1,79
Rec.	**2,10**	**2,10**	**0,00**	**2,10**	**5,11**	**2,13**	**0,00**	**4,33**	**1,86**	**1,79**

Ref.No.	IC4501									
Mode	31	32	33	34	35	36	37	38	39	40
Stop	0,00	2,54	2,55	0,73	2,55	0,00	1,73	0,00	0,00	5,11
Play	0,00	2,54	2,55	0,73	2,55	0,00	1,73	0,00	0,00	5,11
Rec.	**0,00**	**2,54**	**2,55**	**0,73**	**2,55**	**0,00**	**1,73**	**0,00**	**0,00**	**5,11**

Ref.No.	IC4501									
Mode	41	42	43	44	45	46	47	48	49	50
Stop	0,00	4,30	4,25	3,26	1,57	4,97	2,54	2,55	0,24	0,24
Play	0,00	4,30	4,25	3,26	1,57	4,97	2,54	2,55	0,24	0,24
Rec.	**0,00**	**4,30**	**4,25**	**3,26**	**1,57**	**4,97**	**2,54**	**2,55**	**0,24**	**0,24**

Ref.No.	IC4501									
Mode	51	52	53	54	55	56	57	58	59	60
Stop	6,13	6,14	6,13	0,00	0,00	0,00	6,15	12,04	6,24	0,00
Play	6,13	6,14	6,13	0,00	0,00	0,00	6,15	12,04	6,24	0,00
Rec.	**6,13**	**6,14**	**6,13**	**0,00**	**0,00**	**0,00**	**6,15**	**12,04**	**6,24**	**0,00**

Ref.No.	IC4501									
Mode	61	62	63	64						
Stop	2,54	2,47	0,00	0,00						
Play	2,54	2,47	0,00	0,00						
Rec.	**2,54**	**2,47**	**0,00**	**0,00**						

Ref.No.	IC6001									
Mode	1	2	3	4	5	6	7	8	9	10
Stop	5,02	4,12	0,00	0,00	5,04	0,70	0,70	4,75	2,95	5,04
Play	5,02	4,12	0,00	0,00	5,04	5,02	0,70	0,60	2,95	5,04
Rec.	**5,02**	**4,12**	**0,00**	**0,00**	**5,04**	**0,70**	**0,70**	**4,75**	**2,95**	**5,04**

Ref.No	IC6001									
Mode	11	12	13	14	15	16	17	18	19	20
Stop	0,00	0,00	0,00	5,03	3,91	0,00	0,00	0,00	0,00	0,03
Play	0,00	0,00	0,00	5,03	3,91	0,00	0,00	0,00	0,00	0,00
Rec.	**0,00**	**0,00**	**0,00**	**5,03**	**3,91**	**0,00**	**0,00**	**0,00**	**0,00**	**0,03**

Ref.No.	IC6001									
Mode	21	22	23	24	25	26	27	28	29	30
Stop	0,00	0,00	4,34	0,00	0,00	5,05	0,00	0,00	0,00	5,03
Play	0,00	0,00	4,34	0,00	0,00	5,05	0,00	0,00	0,00	5,03
Rec.	**0,00**	**0,00**	**4,34**	**0,00**	**0,00**	**5,05**	**0,00**	**0,00**	**0,00**	**5,03**

Ref.No.	IC6001									
Mode	31	32	33	34	35	36	37	38	39	40
Stop	5,03	5,02	0,00	4,57	0,00	0,00	5,03	2,17	2,09	0,00
Play	5,03	5,02	0,00	4,57	0,00	0,00	5,03	2,17	2,09	0,00
Rec.	**5,03**	**0,00**	**0,00**	**0,00**	**0,00**	**0,00**	**5,03**	**2,17**	**2,09**	**0,00**

Ref.No.	IC6001									
Mode	41	42	43	44	45	46	47	48	49	50
Stop	0,00	0,00	5,10	0,00	0,00	0,00	2,01	2,27	0,00	1,69
Play	0,00	0,00	5,10	0,00	0,00	0,00	2,01	2,27	0,00	1,69
Rec.	**0,00**	**0,00**	**5,10**	**0,00**	**0,00**	**0,00**	**2,01**	**2,27**	**0,00**	**1,69**

Ref.No.	IC6001									
Mode	51	52	53	54	55	56	57	58	59	60
Stop	2,52	1,70	5,03	2,23	0,47	1,94	0,00	0,40	0,00	0,00
Play	2,52	1,70	5,03	2,23	0,00	1,94	0,00	0,00	0,00	0,00
Rec.	**2,52**	**1,70**	**5,03**	**2,23**	**0,00**	**1,94**	**0,00**	**0,00**	**0,00**	**0,00**

Ref.No.	IC6001									
Mode	61	62	63	64	65	66	67	68	69	70
Stop	0,01	0,00	0,00	0,00	0,00	0,00	0,00	3,95	2,43	4,26
Play	0,01	0,00	0,00	0,00	0,00	0,00	0,00	3,95	2,43	4,26
Rec.	**0,01**	**0,00**	**0,00**	**0,00**	**0,00**	**0,00**	**0,00**	**3,95**	**2,43**	**4,26**

Ref.No.	IC6001									
Mode	71	72	73	74	75	76	77	78	79	80
Stop	4,26	4,22	0,00	0,00	4,81	0,00	5,04	0,00	0,14	5,07
Play	4,26	4,22	0,00	0,00	4,81	0,00	5,04	0,00	0,14	5,07
Rec.	**4,26**	**4,22**	**0,00**	**0,00**	**4,81**	**0,00**	**5,04**	**0,00**	**0,14**	**5,07**

Ref.No.	IC6001									
Mode	81	82	83	84	85	86	87	88	89	90
Stop	0,00	0,00	0,00	0,00	0,00	2,54	2,54	0,00	0,00	2,46
Play	0,00	0,00	0,00	0,00	0,00	2,54	2,54	0,00	0,00	2,46
Rec.	**0,00**	**0,00**	**0,00**	**0,00**	**0,00**	**2,54**	**2,54**	**0,00**	**0,00**	**2,46**

Ref.No.	IC6001									
Mode	91	92	93	94	95	96	97	98	99	100
Stop	2,54	2,54	0,00	2,50	2,50	2,53	2,53	5,08	5,04	0,00
Play	2,54	2,54	0,00	2,50	2,50	2,53	2,53	5,08	5,04	0,00
Rec.	**2,54**	**2,54**	**0,00**	**2,50**	**2,50**	**2,53**	**2,53**	**5,08**	**5,04**	**0,00**

Ref.No	IC6302									
Mode	1	2	3	4						
Stop	5,02	0,00	4,87	5,67						
Play	5,02	0,00	4,87	5,67						
Rec.	**5,02**	**0,00**	**4,87**	**5,67**						

Ref.No.	IC7301									
Mode	1	2	3	4	5	6	7	8	9	10
Stop	2,42	2,43	2,43	0,00	0,00	2,43	0,00	2,42	0,00	2,43
Play	2,42	2,43	2,43	0,00	0,00	2,43	0,00	2,42	0,00	2,43
Rec.	**2,42**	**2,43**	**2,43**	**0,00**	**0,00**	**2,43**	**0,00**	**2,42**	**0,00**	**2,43**

Ref.No	IC7301									
Mode	11	12	13	14	15	16	17	18	19	20
Stop	0,00	0,00	0,00	2,92	2,5	0,00	0,00	2,93	0,00	0,00
Play	0,00	0,00	0,00	2,92	2,5	0,00	0,00	2,93	0,00	0,00
Rec.	**0,00**	**0,00**	**0,00**	**2,92**	**2,5**	**0,00**	**0,00**	**2,93**	**0,00**	**0,00**

Ref.No.	IC7301									
Mode	21	22	23	24	25	26	27	28	29	30
Stop	0,63	0,00	0,00	1,40	2,39	1,41	0,00	4,97	4,66	4,52
Play	0,63	0,00	0,00	1,40	2,39	1,41	0,00	4,97	4,66	4,52
Rec.	**0,63**	**0,00**	**0,00**	**1,40**	**2,39**	**1,41**	**0,00**	**4,97**	**4,66**	**4,52**

Ref.No.	IC7301									
Mode	31	32	33	34	35	36	37	38	39	40
Stop	2,97	2,42	2,42	2,12	2,53	0,00	0,00	2,42	2,42	2,42
Play	2,97	2,42	2,42	2,12	2,53	0,00	0,00	2,42	2,42	2,42
Rec.	**2,97**	**2,42**	**2,42**	**2,12**	**2,53**	**0,00**	**0,00**	**2,42**	**2,42**	**2,42**

Ref.No.	IC7301									
Mode	41	42	43	44						
Stop	2,43	0,00	2,43	0,00						
Play	2,43	0,00	2,43	0,00						
Rec.	**2,43**	**0,00**	**2,43**	**0,00**						

Ref.No.	IC7401									
Mode	1	2	3	4	5	6	7	8		
Stop	4,92	0,00	1,26	0,00	5,66	0,00	0,00	5,66		
Play	4,92	0,00	1,26	0,00	5,66	0,00	0,00	5,66		
Rec.	**4,92**	**0,00**	**1,26**	**0,00**	**5,66**	**0,00**	**0,00**	**5,66**		

Ref.No.	IC7402									
Mode	1	2	3	4	5	6	7	8		
Stop	4,93	0,00	1,26	0,00	4,66	0,00	0,00	5,66		
Play	4,93	0,00	1,26	0,00	4,66	0,00	0,00	5,66		
Rec.	**4,93**	**0,00**	**1,26**	**0,00**	**4,66**	**0,00**	**0,00**	**5,66**		

Ref.No.	IC7403									
Mode	1	2	3	4	5	6	7	8		
Stop	4,98	0,00	1,28	0,00	4,81	0,00	0,00	5,66		
Play	4,98	0,00	1,28	0,00	4,81	0,00	0,00	5,66		
Rec.	**4,98**	**0,00**	**1,28**	**0,00**	**4,81**	**0,00**	**0,00**	**5,66**		

Ref.No.	IC9102									
Mode	1	2	3	4	5	6	7	8		
Stop	4,98	0,00	1,27	0,00	4,78	0,00	0,00	5,68		
Play	4,98	0,00	1,27	0,00	4,78	0,00	0,00	5,68		
Rec.	**4,98**	**0,00**	**1,27**	**0,00**	**4,77**	**0,00**	**0,00**	**5,68**		

Ref.No.	IC9106									
Mode	1	2	3	4	5	6	7	8		
Stop	3,27	0,00	1,26	0,00	4,78	0,00	0,00	3,74		
Play	3,27	0,00	1,26	0,00	4,78	0,00	0,00	3,74		
Rec.	**3,28**	**0,00**	**1,27**	**0,00**	**4,78**	**0,00**	**0,00**	**3,72**		

Ref.No.	IC9301									
Mode	1	2	3	4	5	6				
Stop	1,27	0,00	4,78	5,68	0,00	5,00				
Play	1,27	0,00	4,78	5,68	0,00	5,00				
Rec.	**1,23**	**0,00**	**4,77**	**5,68**	**0,00**	**5,00**				

Ref.No.	IC9302									
Mode	1	2	3	4	5	6	7	8		
Stop	4,78	3,33	3,33	0,00	3,33	3,33	4,74	10,54		
Play	4,78	3,33	3,33	0,00	3,33	3,33	4,74	10,54		
Rec.	**4,78**	**3,33**	**3,33**	**0,00**	**3,33**	**3,33**	**4,74**	**10,54**		

Ref.No.	IC9305									
Mode	1	2	3	4	5	6	7	8		
Stop	10,54	5,00	5,00	0,00	3,33	3,33	3,33	12,31		
Play	10,54	5,00	5,00	0,00	3,33	3,33	3,33	12,31		
Rec.	**10,54**	**5,00**	**5,00**	**0,00**	**3,33**	**3,33**	**3,33**	**12,31**		

Ref.No.	IC9702									
Mode	1	2	3	4	5					
Stop	2,35	3,27	0,00	0,00	0,00					
Play	2,35	3,27	0,00	0,00	0,00					
Rec.	**2,35**	**3,27**	**0,00**	**0,00**	**0,00**					

Ref.No.	IC9703									
Mode	1	2	3	4	5					
Stop	4,57	5,05	0,00	0,00	0,00					
Play	4,57	5,05	0,00	0,00	0,00					
Rec.	**4,57**	**5,05**	**0,00**	**0,00**	**0,00**					

Ref.No.	IC9704									
Mode	1	2	3	4	5	6	7	8	9	10
Stop	2,35	4,28	5,01	4,46	0,13	0,15	4,29	0,00	0,00	0,85
Play	2,38	4,28	5,01	4,46	0,17	0,16	4,29	0,00	0,00	0,85
Rec.	**2,42**	**4,28**	**5,01**	**4,46**	**0,16**	**0,17**	**4,29**	**0,00**	**0,00**	**0,85**

Ref.No.	IC9704									
Mode	11	12	13	14	15	16	17	18	19	20
Stop	1,96	4,84	2,05	0,00	1,97	3,27	4,81	3,28	3,20	0,00
Play	1,20	4,84	2,05	0,00	1,97	3,27	4,81	3,28	3,22	0,00
Rec.	**1,20**	**4,83**	**2,05**	**0,00**	**1,97**	**3,28**	**4,83**	**3,28**	**3,18**	**0,00**

Ref.No.	IC9704									
Mode	21	22	23	24	25	26	27	28	29	30
Stop	3,00	0,00	3,22	0,00	0,00	0,00	0,00	0,00	4,65	4,53
Play	3,00	1,31	3,22	0,00	0,00	0,00	0,00	0,00	4,65	4,53
Rec.	**3,01**	**0,00**	**3,21**	**0,00**	**0,00**	**0,00**	**0,00**	**0,00**	**4,65**	**4,53**

Ref.No.	IC9704									
Mode	31	32	33	34	35	36	37	38	39	40
Stop	3,28	3,28	0,00	0,00	0,66	3,19	3,26	3,28	2,60	5,03
Play	3,28	3,28	0,00	0,00	0,66	3,23	3,26	3,28	2,55	5,02
Rec.	**0,00**	**3,25**	**0,00**	**0,00**	**0,66**	**3,20**	**3,26**	**3,28**	**2,56**	**5,01**

Ref.No.	IC9704									
Mode	41	42	43	44	45	46	47	48	49	50
Stop	4,83	4,82	4,82	4,78	2,94	4,81	4,92	0,00	4,79	0,01
Play	4,83	4,82	4,82	4,77	2,93	4,83	4,92	0,00	0,00	0,01
Rec.	**4,83**	**4,82**	**4,82**	**4,77**	**2,94**	**4,83**	**4,92**	**0,00**	**4,79**	**0,01**

Ref.No.	IC9704									
Mode	51	52	53	54	55	56	57	58	59	60
Stop	4,83	0,01	0,00	0,01	0,00	0,00	0,01	0,00	0,01	5,02
Play	4,83	0,01	0,00	0,01	0,00	0,00	0,01	0,00	0,01	5,03
Rec.	**4,83**	**0,01**	**0,00**	**0,01**	**0,00**	**0,00**	**0,01**	**0,00**	**0,01**	**5,02**

Ref.No.	IC9704									
Mode	61	62	63	64	65	66	67	68	69	70
Stop	0,00	4,84	0,01	0,00	4,83	4,83	0,01	0,01	0,01	0,01
Play	0,00	4,84	0,01	0,00	4,83	4,83	0,01	0,01	0,01	0,01
Rec.	**0,00**	**4,84**	**0,01**	**0,00**	**4,83**	**4,83**	**0,01**	**0,01**	**0,01**	**0,01**

Ref.No.	IC9704									
Mode	71	72	73	74	75	76	77	78	79	80
Stop	4,80	0,01	4,54	0,00	5,03	0,01	0,01	0,01	0,01	3,90
Play	4,80	0,01	4,54	0,00	5,02	0,01	0,01	0,01	0,01	3,89
Rec.	**4,80**	**0,01**	**4,54**	**0,00**	**5,02**	**0,01**	**0,01**	**0,01**	**0,01**	**3,90**

Ref.No.	IC9704									
Mode	81	82	83	84	85	86	87	88	89	90
Stop	0,00	0,00	0,00	1,96	0,00	5,04	5,04	5,02	1,96	4,83
Play	0,00	0,00	0,00	1,96	0,00	4,49	5,01	5,02	1,96	4,84
Rec.	**0,00**	**0,00**	**0,00**	**1,96**	**0,00**	**5,03**	**5,02**	**5,02**	**2,05**	**4,83**

Ref.No.	IC9704									
Mode	91	92	93	94	95	96	97	98	99	100
Stop	0,00	0,00	2,61	1,57	1,22	0,00	0,00	1,92	4,84	4,04
Play	0,00	0,00	2,61	1,57	1,22	0,00	0,00	2,13	4,84	4,00
Rec.	**0,00**	**0,00**	**2,61**	**1,57**	**1,22**	**0,00**	**0,00**	**1,81**	**4,84**	**4,00**

Ref.No.	IC9705									
Mode	1	2	3	4	5	6	7	8		
Stop	0,00	0,00	0,00	0,00	3,28	3,28	0,03	3,27		
Play	0,00	0,00	0,00	0,00	3,28	3,28	0,03	3,27		
Rec.	**0,00**	**0,00**	**0,00**	**0,00**	**3,28**	**3,28**	**0,03**	**3,27**		

Ref.No.	IC9706									
Mode	1	2	3	4	5					
Stop	0,00	0,00	0,00	4,84	4,84					
Play	0,00	0,00	0,00	4,84	4,84					
Rec.	**0,00**	**0,00**	**0,00**	**4,84**	**4,84**					

Ref.No.	Q1201									
Mode	1	2	3	4	5	6	7	8		
Stop	12,32	12,32	12,32	6,12	12,32	12,32	12,32	12,32		
Play	12,32	12,32	12,32	6,12	12,32	12,32	12,32	12,32		
Rec.	**12,32**	**12,32**	**12,30**	**6,12**	**12,32**	**12,32**	**12,30**	**12,3**		

Ref.No	Q1202									
Mode	1	2	3	4	5	6				
Stop	5,77	5,77	6,54	12,03	5,77	5,77				
Play	5,77	5,77	6,54	12,03	5,77	5,77				
Rec.	**5,77**	**5,77**	**6,54**	**12,03**	**5,77**	**5,77**				

Ref.No.	Q6401			Q6402			Q6403			
Mode	E	B	C	E	B	C	E	B	C	
Stop	0,00	0,00	12,32	0,00	0,00	4,34	0,00	0,56	0,02	
Play	11,73	12,92	12,32	0,00	0,00	4,34	0,00	0,56	0,02	
Rec.	**0,00**	**0,00**	**12,32**	**0,00**	**0,00**	**4,34**	**0,00**	**0,56**	**0,02**	

Ref.No.	Q6404			Q9106			Q9701			
Mode	E	B	C	E	B	C	E	B	C	
Stop	0,00	0,02	5,04	3,29	3,94	5,59	2,73	2,13	0,00	
Play	0,00	0,02	5,04	3,29	3,94	5,59	2,73	2,13	0,00	
Rec.	**0,00**	**0,02**	**5,03**	**3,29**	**3,94**	**5,59**	**2,56**	**1,91**	**0,00**	

Ref.No.	Q9702			Q9703			Q9705			
Mode	E	B	C	E	B	C	E	B	C	
Stop	1,87	1,61	5,04	0,01	0,38	12,29	2,65	1,95	0,00	
Play	1,87	1,61	5,04	1,07	1,64	11,63	2,65	1,95	0,00	
Rec.	**2,01**	**1,60**	**5,04**	**1,07**	**1,64**	**11,66**	**2,65**	**2,00**	**0,00**	

Ref.No.	Q9706			Q3002			Q4001			
Mode	E	B	C	E	B	C	E	B	C	
Stop	2,00	1,61	5,05	1,57	2,20	5,12	0,01	0,75	0,02	
Play	2,00	1,61	5,05	1,57	2,20	5,12	0,01	0,75	0,02	
Rec.	**2,00**	**1,61**	**5,05**	**1,57**	**2,20**	**5,12**	**0,01**	**0,75**	**0,02**	

Ref.No	Q4002			Q4003			Q4004			
Mode	E	B	C	E	B	C	E	B	C	
Stop	0,01	0,75	0,00	0,00	0,16	0,16	5,65	5,65	0,16	
Play	0,01	0,75	0,00	0,00	0,16	0,16	5,65	5,65	0,16	
Rec.	**0,01**	**0,75**	**0,00**	**0,00**	**0,16**	**0,16**	**5,65**	**5,65**	**0,16**	

Ref.No.	Q4502			Q4901			Q6102			
Mode	E	B	C	E	B	C	E	B	C	
Stop	12,05	11,42	12,10	12,16	11,43	12,1	1,49	2,14	5,03	
Play	12,13	11,42	12,10	12,14	11,40	12,09	1,49	2,28	5,04	
Rec.	**12,13**	**11,42**	**12,10**	**12,13**	**11,40**	**12,07**	**1,49**	**2,25**	**5,04**	

Ref.No.	Q6103			Q6104			Q6305			
Mode	E	B	C	E	B	C	E	B	C	
Stop	2,98	3,60	5,04	2,3	1,60	0,00	5,09	5,85	5,66	
Play	3,12	3,71	5,04	2,33	1,73	0,00	5,09	5,85	5,65	
Rec.	**3,04**	**3,66**	**5,03**	**2,32**	**1,54**	**0,00**	**5,09**	**5,85**	**5,65**	

Ref.No.	Q6801			QR1202			QR1203			
Mode	E	B	C	E	B	C	E	B	C	
Stop	0,00	0,00	12,05	0,03	4,78	0,00	0,00	4,82	0,01	
Play	0,00	0,00	12,05	0,03	4,78	0,00	0,00	4,81	0,01	
Rec.	**0,00**	**0,00**	**12,05**	**0,04**	**4,78**	**0,00**	**0,00**	**4,81**	**0,02**	

Ref.No.	QR9101			QR6402			QR6403			
Mode	E	B	C	E	B	C	E	B	C	
Stop	3,29	3,28	5,38	0,00	0,00	0,00	0,00	4,80	0,00	
Play	3,29	3,28	5,38	0,00	0,01	12,27	0,00	0,01	12,00	
Rec.	**3,29**	**3,28**	**5,38**	**0,00**	**0,00**	**0,00**	**0,00**	**4,79**	**0,00**	

Ref.No.	QR9301			QR9305			QR9305			
Mode	E	B	C	E	B	C	E	B	C	
Stop	5,68	5,38	0,06	0,00	0,00	0,01	0,02	0,00	0,01	
Play	5,68	5,38	0,00	0,00	0,00	0,01	0,02	0,00	0,01	
Rec.	**5,68**	**5,38**	**0,00**	**0,00**	**0,00**	**0,01**	**0,00**	**0,00**	**0,01**	

Ref.No.	QR9701			QR9703			QR4003			
Mode	E	B	C	E	B	C	E	B	C	
Stop	0,00	2,35	0,00	0,00	4,57	0,00	0,00	0,00	0,00	
Play	0,00	2,35	0,00	0,00	4,57	0,00	0,00	0,00	0,00	
Rec.	**0,00**	**2,35**	**0,00**	**0,00**	**4,57**	**0,00**	**0,00**	**0,00**	**0,00**	

Ref.No.	QR4004			QR4005			QR4501			
Mode	E	B	C	E	B	C	E	B	C	
Stop	5,13	0,03	5,04	0,00	0,01	5,65	0,00	4,87	0,02	
Play	5,13	0,03	5,04	0,00	0,01	5,65	0,00	4,87	0,02	
Rec.	**5,13**	**0,03**	**5,04**	**0,00**	**0,01**	**5,65**	**0,00**	**4,87**	**0,02**	

Ref.No.	QR4901			QR4902			QR4903			
Mode	E	B	C	E	B	C	E	B	C	
Stop	0,00	0,01	4,92	4,93	4,92	0,00	0,00	0,05	0,19	
Play	0,00	0,01	4,92	4,93	4,92	0,00	0,00	0,01	0,29	
Rec.	**0,00**	**0,01**	**4,92**	**4,93**	**4,92**	**0,00**	**0,00**	**0,01**	**0,32**	

Ref.No.	QR4904			QR4905			QR4906			
Mode	E	B	C	E	B	C	E	B	C	
Stop	0,00	0,00	1,80	0,00	0,00	0,00	0,00	0,33	0,45	
Play	0,00	0,00	1,85	0,00	0,00	0,00	0,00	0,00	0,62	
Rec.	**0,00**	**0,00**	**1,93**	**0,00**	**0,00**	**0,00**	**0,00**	**0,00**	**0,62**	

Ref.No.	QR4911			QR4912			QR4913			
Mode	E	B	C	E	B	C	E	B	C	
Stop	0,00	0,00	0,00	0,00	0,00	0,33	0,00	0,00	0,17	
Play	0,00	0,00	0,00	0,00	0,00	0,48	0,00	0,00	0,36	
Rec.	**0,00**	**0,00**	**0,00**	**0,00**	**0,00**	**0,46**	**0,00**	**0,00**	**0,36**	

Ref.No.	QR4914			QR4915			QR6801			
Mode	E	B	C	E	B	C	E	B	C	
Stop	0,00	4,66	0,04	0,00	0,01	4,66	12,15	12,04	0,00	
Play	0,00	4,65	0,05	0,00	0,01	4,66	12,13	12,02	0,00	
Rec.	**0,00**	**4,65**	**0,04**	**0,00**	**0,01**	**4,66**	**12,13**	**12,02**	**0,00**	

Ref.No.	QR7803			QR7804			QR7901			
Mode	E	B	C	E	B	C	E	B	C	
Stop	0,00	4,82	0,04	33,78	0,04	33,75	0,00	0,01	0,06	
Play	0,00	4,82	0,04	33,81	0,04	33,84	0,00	0,01	0,07	
Rec.	**0,00**	**4,82**	**0,04**	**33,83**	**0,04**	**33,8**	**0,00**	**0,01**	**0,07**	

Ref.No.	P6001									
Mode	1	2	3	4	5	6	7	8	9	10
Stop	4,54	5,04	0,00	5,03	0,00	4,30	2,40	4,01	0,00	5,04
Play	4,54	5,04	0,00	5,03	0,00	4,30	2,40	4,01	0,00	5,04
Rec.	**4,54**	**5,04**	**0,00**	**5,03**	**0,00**	**4,30**	**2,40**	**4,01**	**0,00**	**5,04**

Ref.No.	P6001									
Mode	11	12	13	14	15					
Stop	0,00	3,90	0,00	0,00	12,33					
Play	0,00	3,90	0,00	0,00	12,33					
Rec.	**0,00**	**3,90**	**0,00**	**0,00**	**12,33**					

Ref.No.	P6002									
Mode	1	2	3	4	5	6	7	8	9	10
Stop	0,00	4,81	0,00	1,91	4,66	4,53	0,00	1,96	4,92	4,47
Play	0,00	4,81	0,00	1,91	4,66	4,53	0,00	1,96	4,92	4,47
Rec.	**0,00**	**4,81**	**0,00**	**1,91**	**4,66**	**4,53**	**0,00**	**1,96**	**4,92**	**4,47**

Ref.No.	P6002									
Mode	11	12	13	14	15					
Stop	0,00	0,00	0,00	4,34	0,00					
Play	0,00	11,08	0,00	4,34	0,00					
Rec.	**0,00**	**0,00**	**0,00**	**4,34**	**0,00**					

Ref.No.	P6003									
Mode	1	2	3	4	5	6	7	8	9	10
Stop	2,08	1,41	0,00	0,84	0,62	0,87	0,00	0,85	0,57	5,68
Play	2,08	1,41	0,00	0,84	0,62	0,87	0,00	0,85	0,57	5,68
Rec.	**2,08**	**1,41**	**0,00**	**0,84**	**0,62**	**0,87**	**0,00**	**0,85**	**0,57**	**5,68**

Ref.No	P6003									
Mode	11	12	13	14	15	16	17	18	19	
Stop	5,68	12,3	2,47	0,00	2,47	0,00	0,00	0,00	0,00	
Play	5,68	12,3	2,47	0,00	2,47	0,00	0,00	0,00	0,00	
Rec.	**5,68**	**12,3**	**2,47**	**0,00**	**2,47**	**0,00**	**0,00**	**0,00**	**0,00**	

Ref.No.	P9703									
Mode	1	2	3	4	5	6	7	8	9	10
Stop	2,95	12,28	3,26	12,28	3,21	0,00	0,14	0,00	3,23	5,18
Play	2,95	12,28	3,26	12,28	3,21	0,00	0,14	0,00	3,23	5,18
Rec.	**2,95**	**12,28**	**3,26**	**12,28**	**3,21**	**0,00**	**0,14**	**0,00**	**3,23**	**5,18**

Ref.No	P9703									
Mode	11	12	13	14	15	16	17	18	19	20
Stop	3,28	5,18	5,01	3,29	5,01	2,88	2,47	4,77	2,47	3,25
Play	3,28	5,18	5,01	3,29	5,01	2,88	2,47	4,77	2,47	3,25
Rec.	**3,28**	**5,18**	**5,01**	**3,29**	**5,01**	**2,88**	**2,47**	**4,77**	**2,47**	**3,25**

Ref.No.	P9703									
Mode	21	22	23	24	25	26	27	28	29	30
Stop	0,00	3,27	0,00	3,28	0,00	3,28	2,44	0,00	2,42	3,26
Play	0,00	3,27	0,00	3,28	0,00	3,28	2,44	0,00	2,42	3,26
Rec.	**0,00**	**3,27**	**0,00**	**3,28**	**0,00**	**3,28**	**2,44**	**0,00**	**2,42**	**3,26**

Ref.No.	P9703									
Mode	31	32	33	34	35	36	37	38	39	40
Stop	0,00	1,62	0,00	0,00	0,00	3,28	0,00	3,28	0,55	0,00
Play	0,00	1,62	0,00	0,00	0,00	3,28	0,00	3,28	0,55	0,00
Rec.	**0,00**	**1,62**	**0,00**	**0,00**	**0,00**	**3,28**	**0,00**	**3,28**	**0,55**	**0,00**

Ref.No.	P9703									
Mode	41	42	43	44	45	46	47	48	49	50
Stop	0,00	0,00	0,85	3,27	0,00	3,28	0,88	3,73	0,00	3,73
Play	0,00	0,00	0,85	3,27	0,00	3,28	0,88	3,73	0,00	3,73
Rec.	**0,00**	**0,00**	**0,85**	**3,27**	**0,00**	**3,28**	**0,88**	**3,73**	**0,00**	**3,73**

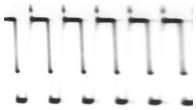
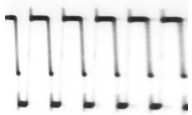
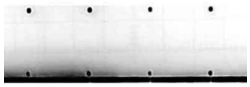
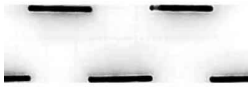
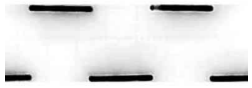
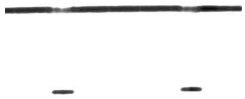
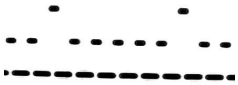
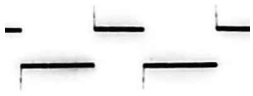
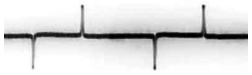
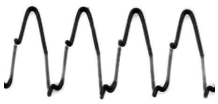
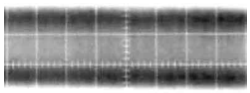
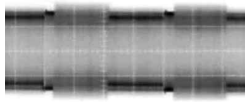
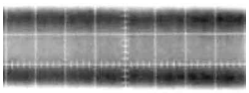
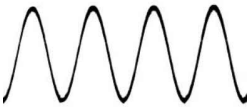
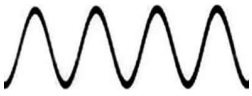
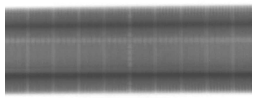
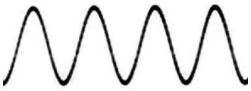
Ref.No.	P9703									
Mode	51	52	53	54	55	56	57	58	59	60
Stop	0,58	12,09	0,00	12,09	0,86	12,09	0,00	12,01	1,43	12,08
Play	0,58	12,09	0,00	12,09	0,86	12,09	0,00	12,01	1,43	12,08
Rec.	**0,58**	**12,09**	**0,00**	**12,09**	**0,86**	**12,09**	**0,00**	**12,01**	**1,43**	**12,08**

Ref.No.	P9703									
Mode	61	62	63	64						
Stop	0,00	12,08	2,08	4,98						
Play	0,00	12,08	2,08	4,98						
Rec.	**0,00**	**12,08**	**2,08**	**4,98**						

16.1.3. WAVEFORM CHART

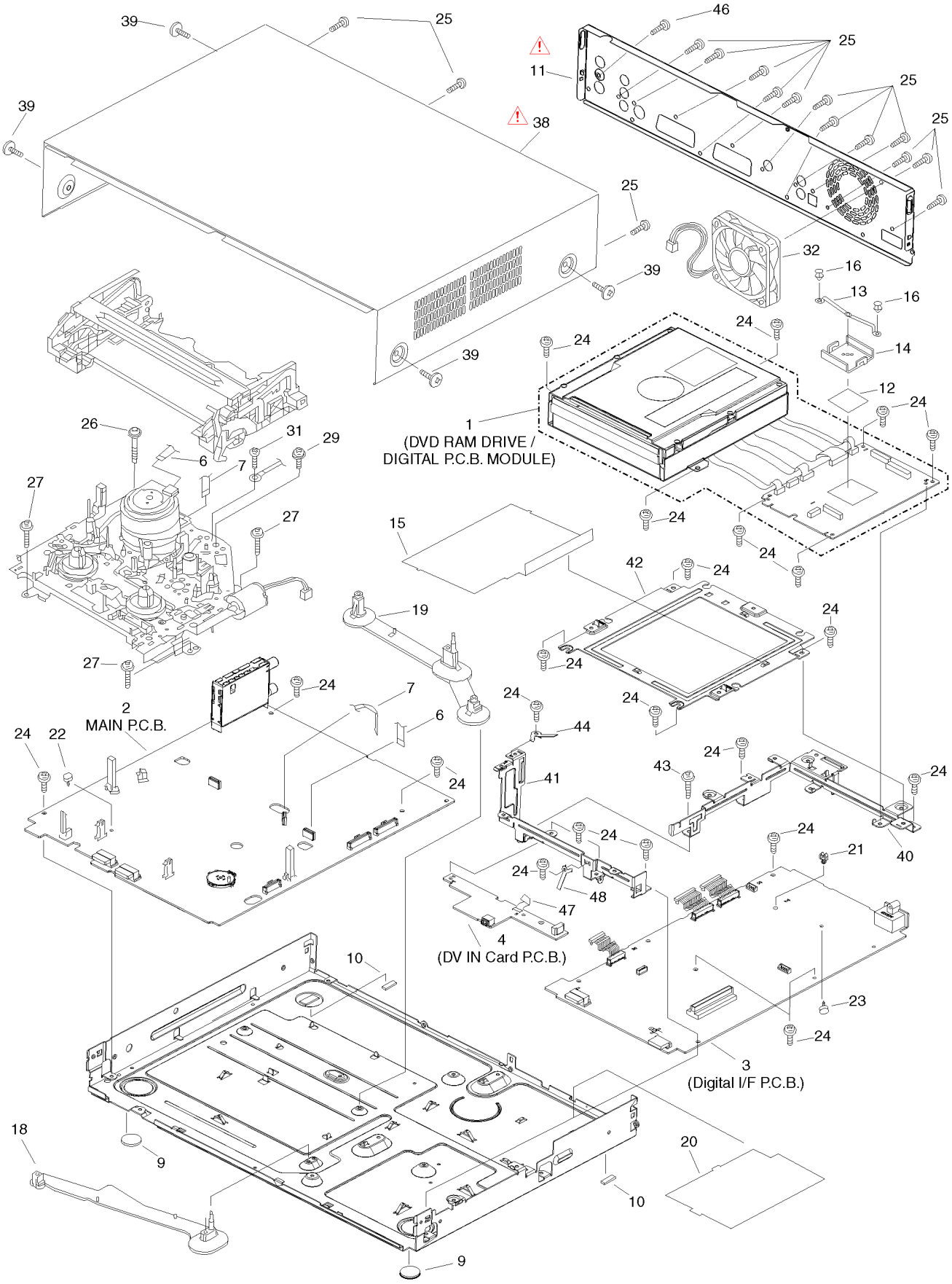
NOTE:

The waveforms are measured with PAL colour bar signal.

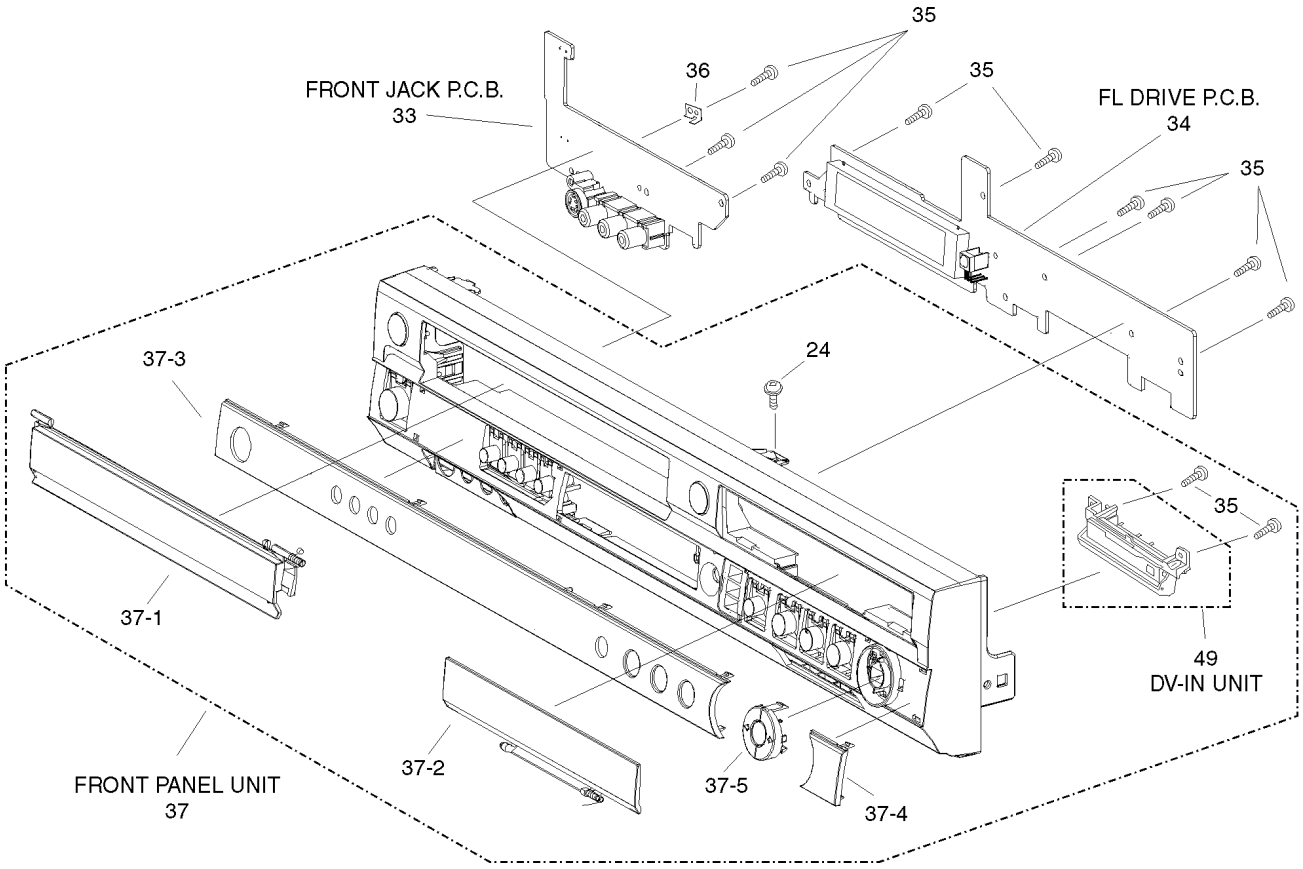
 T1101-5 STOP 50Vp-p (5µsec.div)	 T1101-6 STOP 0.2Vp-p (5µsec.div)	 IC6001-13 PAUSE 5.0Vp-p (10msec.div.)	 IC6001-18 REC 5.0Vp-p (10msec.div.)	 IC6001-19 REC 5.0Vp-p (10msec.div.)
IC6001-48 REC 0.5Vp-p (10msec.div.)	IC6001-52 REC 2.1Vp-p (20µsec.div.)	IC6001-68,69 REC 5.0Vp-p (10msec.div.)	 IC6001-70 REC 5.0Vp-p (10msec.div.)	IC6001-71 REC 5.0Vp-p (10msec.div.)
IC6001-72 REC 5.0Vp-p (10msec.div.)	IC6001-79,80 FF/REW 5.0Vp-p (1msec.div.)	 IC6001-90 REC 5.0Vp-p (10msec.div.)	 IC6001-94,95 REC 6.0Vp-p (10msec.div.)	 IC6001-97 PLAY 4.5Vp-p (10msec.div.)
 IC2501-2,4 REC 12Vp-p (5msec.div.)	IC3001-6 REC/PLAY 0.9Vp-p (0.5msec.div.)	IC3001-15,17,19 REC 1.1Vp-p (20µsec.div.)	IC3001-45,46 PLAY 0.5Vp-p (20µsec.div.)	IC3001-73 REC/PLAY 5.0Vp-p (5msec.div.)
IC3001-74 REC/PLAY 5.0Vp-p (5msec.div.)	IC3001-80 REC/PLAY 0.6Vp-p (10msec.div.)	 IC3001-85 PLAY 1.5Vp-p (20µsec.div.)	 IC3001-86 REC 1.5Vp-p (5msec.div.)	 IC3001-87 PLAY 1.5Vp-p (20µsec.div.)
IC3001-96 PLAY 5.0Vp-p (5msec.div.)	 IC3001-98 REC 2.4Vp-p (1msec.div.)	 IC4501-9,14 REC 100mVp-p (1msec.div.)	 IC4501-21(TW4501) REC 1.5Vp-p (20µsec.div.)	 IC4501-53,57 REC/PLAY 1.9Vp-p (0.2msec.div.)

17 EXPLODED VIEWS

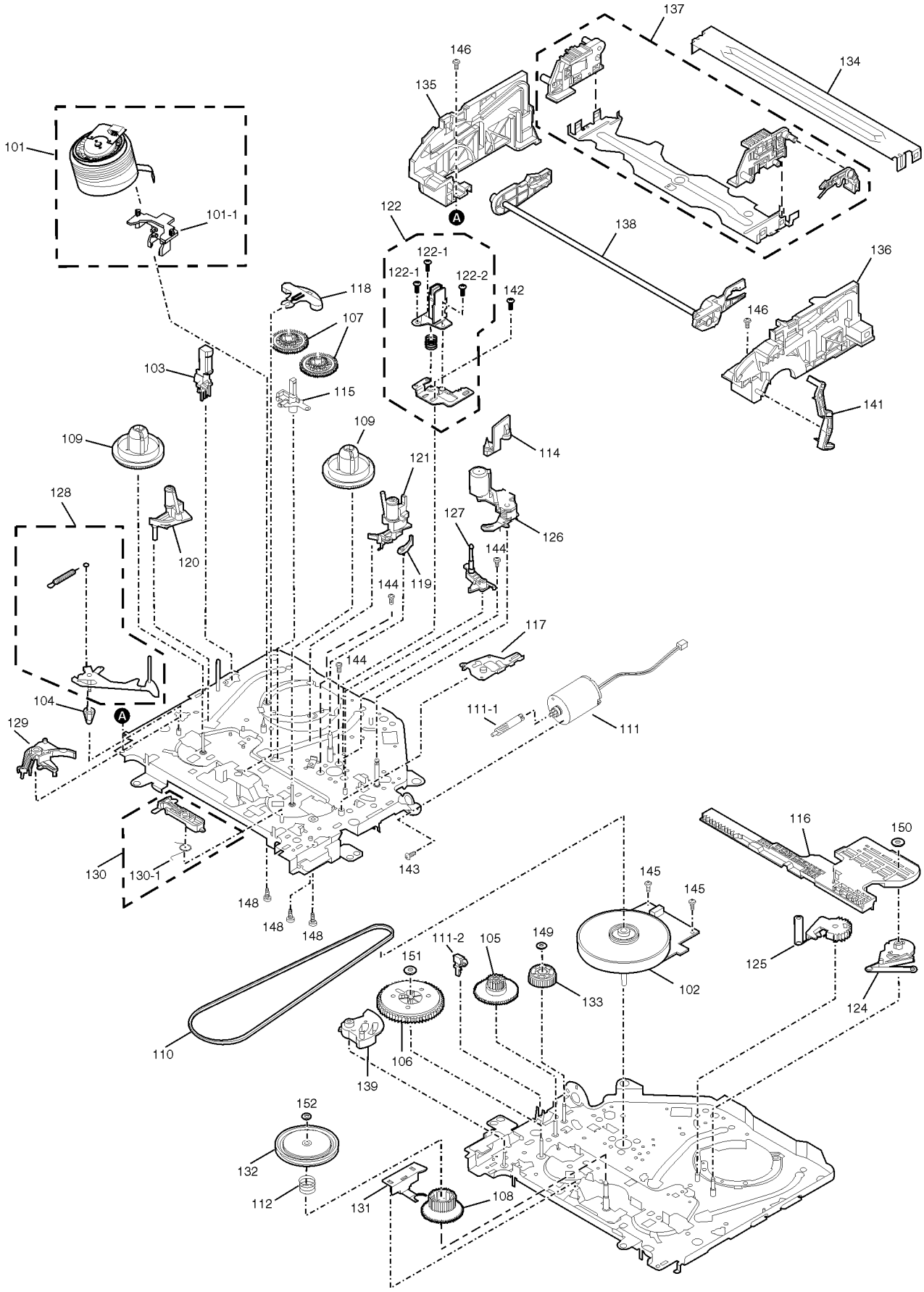
17.1. MECHANISM & CASING PARTS



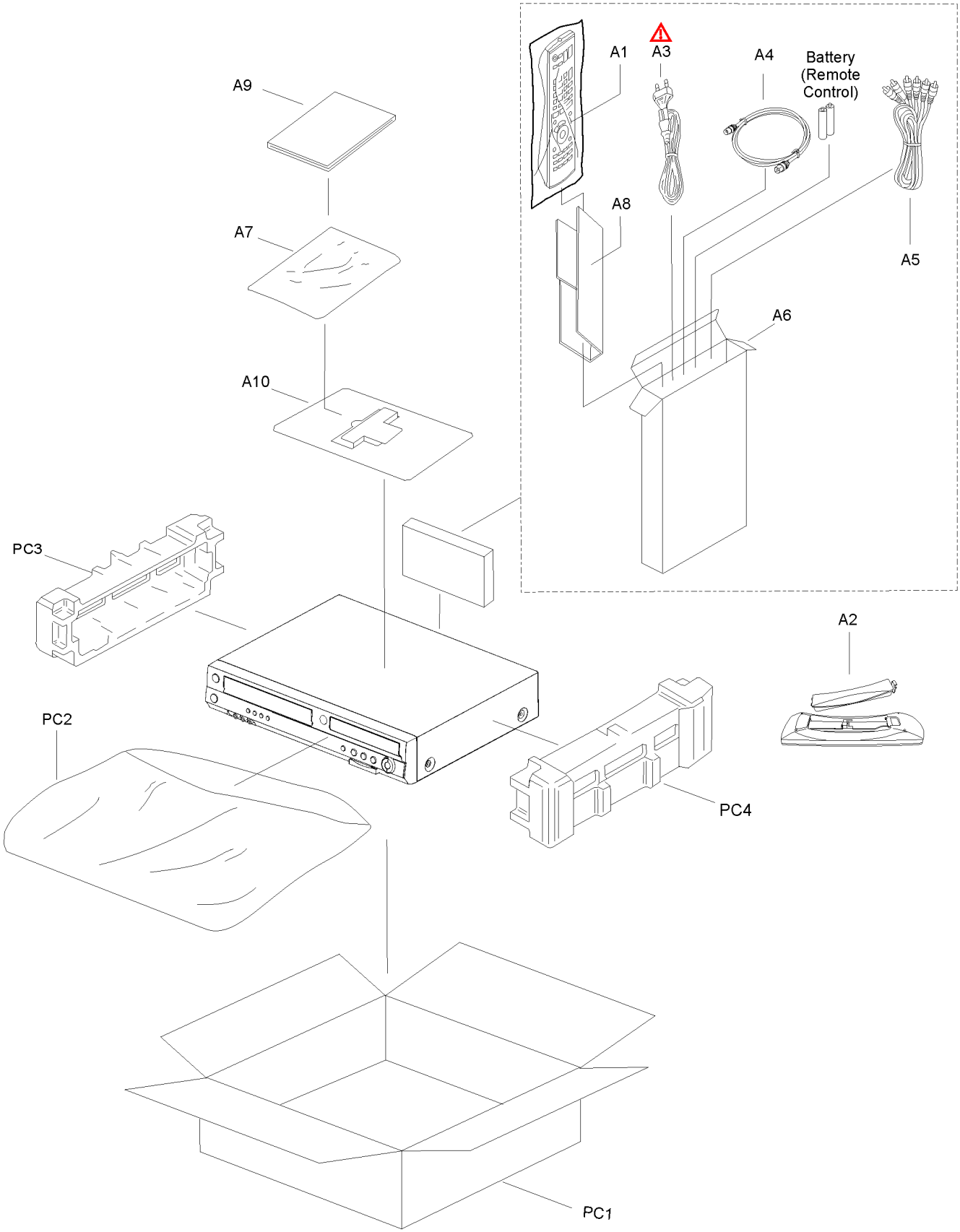
17.2. FRONT PANEL PARTS



17.3. VHS MECHANISM PARTS



17.4. PACKING & ACCESSORIES



18 REPLACEMENT PARTS LIST

NOTES:

*Important safety notice:

Components identified by ⚠ mark have special characteristics important for safety.

Furthermore, special parts which have purposes of fire-retardant (resistors), high-quality sound (capacitors), low-noise (resistors), etc. are used.

When replacing any of components, be sure to use only manufactures specified parts shown in the parts list.

*Warning: This product uses a laser diode.

Refer to caution statements.

*Capacity values are in microfarads (µF) unless specified otherwise, P=Pico-farads (pF), F=Farads (F).

*Resistance values are in ohms, unless specified otherwise, 1K=1,000 (OHM), 1M=1,000k (OHM).

*The marking (RTL) indicates the retention time is limited for this item. After the discontinuation of this assembly in production, it will no longer be available.

*Printed Circuit Board's are identified by "■" character.

*All parts except parts mentioned [SPC] in the Remarks column are supplied from PAVCG.

*Parts mentioned [SPC] are supplied from PAVC.

The *1, *2 in the Remarks column shows the models as follows:

*1 = DMR-ES35VEG-S

*2 = DMR-ES35VEC-S

No indication = all models

18.1. MECHANISM & CASING PARTS

Ref. No.	Part No.	Part Name & Description	PCS	Remarks
1	RFKNES35VEG	RAM/DIGITAL PCB MODULE	1	(RTL)
1	RFKNES35VEC	RAM/DIGITAL PCB MODULE	1	(RTL)
█ 2	REPD0026A	MAIN PCB UNIT	1	*1 (RTL)
■ 2	REPD0026B	MAIN PCB UNIT	1	*2 (RTL)
█ 3	RFKBD0033AT	DIGIT INTERF UNIT	1	(RTL)
█ 4	REPD0046A	DV PCB UNIT	1	(RTL)
6	VWJ1727-RW	FFC	1	
7	VWJ1728-RW	FFC	1	
9	RKA0178-X	LEG	2	
10	VKA0382	LEG CUSHION	2	
11	RGRD0008A-A1	REAR PANEL	2	⚠
12	RMQ1513	HEAT TRANSFER SHEET	1	
13	RMC0672	PLATE SPRING	1	
14	RMY0357	HEAT SINK	1	
15	RMZD0003-2	DIGITAL PCB BARRIER	1	
16	VKC0295	MINI CARD SPACER	2	
18	RMX0354	MECHA SPACER (F)	1	
19	RMX0355	MECHA SPACER (R)	1	
20	VMZ3452	BARRIER	1	
21	RMRD0003	CABLE CLAMPER	1	
22	VKC0554	PCB SUPPORT	1	
23	VKC0295	MINI CARD SPACER	1	
24	RHD30111-3	SCREW	25	
25	VHD0690-1	SCREW	15	
26	VHD1770	SCREW	1	
27	RHDC0023	SCREW	3	
29	VHD1092-1	SCREW	1	
31	XTV26+6FFJ	SCREW	1	
32	L6FAYYYE0001	FAN MOTOR	1	
█ 33	REPD0035A	FR JACK UNIT	1	(RTL)
█ 34	REPD0036A	FL DRIVE UNIT	1	(RTL)
35	RHD26045	SCREW	11	
36	RMCD0002	EARTH SPRING	1	
37	RYP1329-S	FRONT PANEL UNIT	1	
37-1	RKF0757A-S	BLINDER PANEL	1	
37-2	RKF0758A-S1	TRAY DOOR	1	
37-3	RKW0811-Q	FRONT WINDOW	1	
37-4	RKW0810-Q	FR WINDOW	1	
37-5	RGU2475-S	DUB BUTTON	1	
38	RKMD0006-S	TOP CASE	1	⚠
39	RHD30113	SCREW	4	
40	RMAD0006	DVD ANGLE (R)	1	
41	RMAD0005	DVD ANGLE (F)	1	
42	RMAD0009	DVD BRACKET	1	
43	VHD1092-1	SCREW	1	
44	RMC0632	EARTH SPRING	1	
46	XSN3+4FJK	SCREW	1	
47	REZD0023	DV-DIGITAL FFC	1	
48	RMCD0001	EARTH SPRING	1	
49	RYQD0001	DV IN UNIT	1	

18.2. VHS MECHANISM PARTS

Ref. No.	Part No.	Part Name & Description	PCS	Remarks
101	VEG1699KIT	RDD CYLINDER	1	
101-1	VMD5464	FPC HOLDER	1	
102	VEM0800T	CAPSTAN MOTOR	1	
103	L1AZ00000004	FE HEAD	1	
104	VDB1431	TENSION ARM BOSH	1	
105	VDG1686	INTERMEDIATE GEAR	1	
106	VDG1685	MAIN CAM GEAR	1	
107	VDG1512-1	IDLER GEAR	2	
108	VDG1514-3	CHANGE GEAR	1	
109	VDR0372A	REEL TABLE	2	
110	VDV0391-2	CAPSTAN BELT	1	
111	VEM0797	LOADING MOTOR	1	
111-1	VDG1637	WORM GEAR	1	
111-2	VMD4987	WORM BEARING		
112	VMB3550A	CHANGING GEAR SPRING	1	
114	VMD5466	OPENER PIECE	1	
115	VMD4253-1	LED PRISM	1	
116	VML3934	MAIN LEVER	1	
117	VML3933	PINCH CHARGE ARM	1	
118	VML3632	IDLER ARM	1	
119	VMX3092	P4 CAP	1	
120	VXA7105-3	S SHAFT HOLDER	1	
121	VXA7106-3	T SHAFT HOLDER	1	
122	L1AE00000044	AC HEAD	1	
122-1	VHD1066-2	SCREW	2	
122-2	VHD1185	SCREW	1	
124	VXL3107	S LOADING ARM	1	
125	VXL3108	T LOADING ARM	1	
126	VXL3109-7	PINCH ARM UNIT	1	
127	VXL3110	P5 ARM	1	
128	VXL3111-1	TENSION ARM	1	
129	VXL3252	S BRAKE ARM	1	
130	VXL3343	T BRAKE ARM	1	
130-1	VMB3548-2A	T BRAKE SPRING	1	
131	VXL3124-2	CHANGING LEVER UNIT	1	
132	VXP2133-2	CENTER CLUTH UNIT	1	
133	VXP2168	TORQUE CLUTCH	1	

Ref. No.	Part No.	Part Name & Description	PCS	Remarks
134	VMA0L25	TOP PLATE	1	
135	VMD5468	SIDE PLATE(L)	1	
136	VMD5469	SIDE PLATE(R)	1	
137	VXA8265	CASSETTE HOLDER UNIT	1	
138	VXL3160	MAIN SHAFT	1	
139	VXA8323	SECTOR GEAR	1	
141	VML3706-3	OPENER LEVER	1	
142	VHD1044-1	SCREW	1	
143	XYN3+C4FJ	SCREW	1	
144	XTN26+7JFJ	SCREW	3	
145	XTV26+5FFJ	SCREW	2	
146	XTV26+8FFJ	SCREW	2	
148	VHD1117-1	SCREW	3	
149	VMX2208	WASHER	1	
150	VMX3114	WASHER	1	
151	VMX2699	WASHER	1	
152	VMX3196	WASHER	1	

18.3. PACKING & ACCESSORIES PARTS

Ref. No.	Part No.	Part Name & Description	PCS	Remarks
A1	EUR7659YF0	REMOTE CONTROL	1	
A2	UR76EC5903A	BATTERY COVER	1	
A3	RJA0043-1C	POWERCORD	1	⚠
A4	K1TWACC00001	RF CABLE	1	
A5	K2KA6BA00003	AV CORD	1	
A6	RPQFD0007	ACCESSORY BOX	1	
A7	RPFD0005	PE-BAG	1	
A8	RPQD0003	PAD (C)	1	
A9	RQTD0193-D	O/I BOOK	1	<GER>
A9	RQTD0194-V	O/I BOOK	1	<ITA>
A9	RQTD0195-H	O/I BOOK	1	<DUT>
A9	RQTD0196-A	O/I BOOK	1	<ENG CONT>
A9	RQTD0197-C	O/I BOOK	1	*2 <FRE PAL>
A9	RQTD0198-M	O/I BOOK	1	*2 <SPA)
A9	RQTD0199-Z	O/I BOOK	1	*2 <SWE>
A9	RQTD0200-J	O/I BOOK	1	*2 <DAN>
A10	RPQD0006	CORRUGATED PAD	1	*2
PC1	RPG7927-1	CARTON BOX	1	*1
PC1	RPG7928-1	CARTON BOX	1	*2
PC2	RPFD0006	MIRAMAT BAG	1	
PC3	RPN1860A	CUSHION(LEFT)	1	
PC4	RPN1860B	CUSHION(RIGHT)	1	

18.4. ELECTRICAL PARTS

Ref. No.	Part No.	Part Name & Description	PCS	Remarks
C1101	ECQU2A683MLC	X2 CAPACITOR	1	⚠
C1102	ECQU2A683MLC	X2 CAPACITOR	1	⚠
C1103	EEUED2G680E	CAPACITOR	1	
C1104	F0C2G473A022	CAPACITOR	1	
C1105	ECKN3A101KBP	CERAMIC CAPACITOR	1	
C1106	ECKN3A101KBP	CERAMIC CAPACITOR	1	
C1107	ECJ1VB1C474K	CHIP CAPACITOR	1	
C1108	F2A1V3300027	ALU ELEC CAPACITOR	1	
C1109	F1H1H1020005	CHIP CAPACITOR	1	
C1110	ECKWNA101MBV	CERAMIC CAPACITOR	1	⚠
C1111	ECKWNA101MBV	CERAMIC CAPACITOR	1	⚠
C1112	F1BAF471A013	CERAMIC CAPACITOR	1	⚠
C1113	F1BAF221A013	CERAMIC CAPACITOR	1	⚠
C1201	EEUFM1E471B	CAPACITOR	1	
C1202	F2A1C221A019	ALU ELEC CAPACITOR	1	
C1203	EEUFM1C152B	CAPACITOR	1	
C1204	EEUFM1C152B	CAPACITOR	1	
C1205	F1H1H104A731	CHIP CAPACITOR	1	
C1206	F1H1C104A042	CHIP CAPACITOR	1	
C1207	F1H1C104A042	CHIP CAPACITOR	1	
C1208	ECJ1VC1H181J	CHIP CAPACITOR	1	
C1209	F2A1A681A540	ALU ELEC CAPACITOR	1	
C1210	ECA1CHG471B	ALU ELEC CAPACITOR	1	
C1211	F1H1H1030007	CHIP CAPACITOR	1	
C1212	F1H1C333A041	CHIP CAPACITOR	1	
C1214	ECA1CHG471B	ALU ELEC CAPACITOR	1	
C1216	F1H1H104A731	CHIP CAPACITOR	1	
C1217	EEUFM1C121B	ALU ELEC CAPACITOR	1	
C1218	F1H1H1030007	CHIP CAPACITOR	1	
C1219	ECJ1VB1H331K	CHIP CAPACITOR	1	
C1220	F1H1C104A042	CHIP CAPACITOR	1	
C1222	F1H1C224A074	CHIP CAPACITOR	1	
C1223	F2A1A681A540	ALU ELEC CAPACITOR	1	
C1225	F1H1H1020005	CHIP CAPACITOR	1	
C1231	EEUFM1E221B	ALU ELEC CAPACITOR	1	
C1232	F1H1E104A030	CHIP CAPACITOR	1	
C1233	ECJ1VC1H391J	CHIP CAPACITOR	1	
C1234	F1H1C104A042	CHIP CAPACITOR	1	
C1235	F1H1H1020005	CHIP CAPACITOR	1	
C1236	F2A0J681A550	ALU ELEC CAPACITOR	1	
C1237	ECJ1VB1A105K	CHIP CAPACITOR	1	
C2001	F1H1H330A736	CHIP CAPACITOR	1	
C2003	F1H1A1050029	CHIP CAPACITOR	1	
C2051	ECEA0JKN220B	ALU ELEC CAPACITOR	1	
C2053	ECEA1CKA100B	ALU ELEC CAPACITOR	1	
C2054	ECJ1VB1H392K	CHIP CAPACITOR	1	
C2055	F1H1E104A030	CHIP CAPACITOR	1	
C2099	ECJ1VC1H681J	CHIP CAPACITOR	1	
C2501	F1H1E104A030	CHIP CAPACITOR	1	
C2502	ECEA0JKA221B	ALU ELEC CAPACITOR	1	
C2503	ECJ1VB1A105K	CHIP CAPACITOR	1	
C2504	F1H1E223A029	CHIP CAPACITOR	1	
C2505	F1H1E223A029	CHIP CAPACITOR	1	
C2506	F1H1A2240004	CHIP CAPACITOR	1	
C2507	F1H1H1020005	CHIP CAPACITOR	1	
C2508	F1H1H182A219	CHIP CAPACITOR	1	
C2509	ECEA1CKA220B	ALU ELEC CAPACITOR	1	
C2510	F1H1C104A042	CHIP CAPACITOR	1	
C2511	F1H1C104A042	CHIP CAPACITOR	1	
C2512	F1H1C104A042	CHIP CAPACITOR	1	
C2513	F1H1A1050029	CHIP CAPACITOR	1	
C2514	ECJ1VB1A105K	CHIP CAPACITOR	1	
C2515	F1H1H1030007	CHIP CAPACITOR	1	
C2518	F1H1H1030007	CHIP CAPACITOR	1	
C2519	F1H1H1030007	CHIP CAPACITOR	1	
C2551	F1H1C473A071	CHIP CAPACITOR	1	
C2552	ECJ1VB1C683K	CHIP CAPACITOR	1	
C2561	ECJ1VB1C683K	CHIP CAPACITOR	1	
C2562	F1H1C473A071	CHIP CAPACITOR	1	
C2571	ECA1EM331B	ALU ELEC CAPACITOR	1	
C3001	F1H1H1510001	CHIP CAPACITOR	1	
C3003	ECJ1VB1A105K	CHIP CAPACITOR	1	
C3004	F1H1C104A042	CHIP CAPACITOR	1	
C3005	F1H1H2700003	CHIP CAPACITOR	1	
C3006	F1H1C104A042	CHIP CAPACITOR	1	
C3007	ECJ1VB1A105K	CHIP CAPACITOR	1	
C3008	F1H1H1030006	CHIP CAPACITOR	1	
C3009	ECEA1HKA4R7B	ALU ELEC CAPACITOR	1	
C3010	ECJ1VB1A105K	CHIP CAPACITOR	1	
C3011	ECJ1VB1A105K	CHIP CAPACITOR	1	
C3012	ECEA0JKA470B	ALU ELEC CAPACITOR	1	
C3013	F1H1H1030007	CHIP CAPACITOR	1	
C3015	F1H1C104A042	CHIP CAPACITOR	1	
C3016	F1H1H4700004	CHIP CAPACITOR	1	
C3017	ECJ1VB1A105K	CHIP CAPACITOR	1	
C3019	ECEA1CKA100B	ALU ELEC CAPACITOR	1	
C3020	ECJ1VC1H331J	CHIP CAPACITOR	1	
C3021	F1H1H1030007	CHIP CAPACITOR	1	
C3023	ECEA1HKA3R3B	ALU ELEC CAPACITOR	1	
C3024	F1H1H1030006	CHIP CAPACITOR	1	
C3026	ECJ1VB1A105K	CHIP CAPACITOR	1	
C3028	F1H1C104A042	CHIP CAPACITOR	1	
C3029	F1H1C104A042	CHIP CAPACITOR	1	
C3030	F1H1C104A042	CHIP CAPACITOR	1	
C3033	F1H1C104A042	CHIP CAPACITOR	1	

Ref. No.	Part No.	Part Name & Description	PCS	Remarks
C3034	ECEA1HKA010B	ALU ELEC CAPACITOR	1	
C3036	ECEA1HKA4R7B	ALU ELEC CAPACITOR	1	
C3037	ECEA1HKAR47B	ALU ELEC CAPACITOR	1	
C3038	F1H1E223A029	CHIP CAPACITOR	1	
C3039	F1H1C333A041	CHIP CAPACITOR	1	
C3040	ECEA1HKA2R2B	ALU ELEC CAPACITOR	1	
C3041	F1H1E223A029	CHIP CAPACITOR	1	
C3042	ECJ2YB0J335K	CHIP CAPACITOR	1	
C3043	F1H1C104A042	CHIP CAPACITOR	1	
C3044	ECEA0JKA470B	ALU ELEC CAPACITOR	1	
C3045	F1H1H1030007	CHIP CAPACITOR	1	
C3046	ECJ1VC1H030C	CHIP CAPACITOR	1	
C3047	ECEA1HKA010B	ALU ELEC CAPACITOR	1	
C3048	F1H1H1030007	CHIP CAPACITOR	1	
C3049	F1H1H1030007	CHIP CAPACITOR	1	
C3050	F1H1A1050029	CHIP CAPACITOR	1	
C3051	ECJ1VB1A105K	CHIP CAPACITOR	1	
C3052	ECJ1VB1A105K	CHIP CAPACITOR	1	
C3053	F1H1C104A042	CHIP CAPACITOR	1	
C3904	F1H1H1030006	CHIP CAPACITOR	1	
C3905	ECJ1VB1A105K	CHIP CAPACITOR	1	
C3906	F1H1C104A042	CHIP CAPACITOR	1	
C3907	F1J1A105A003	CHIP CAPACITOR	1	
C3908	F1H1C104A042	CHIP CAPACITOR	1	
C3909	F1J1A105A003	CHIP CAPACITOR	1	
C3910	ECJ1VB1A105K	CHIP CAPACITOR	1	
C3911	F1H1C104A042	CHIP CAPACITOR	1	
C3912	ECEA0JKA221B	ALU ELEC CAPACITOR	1	
C3913	F1H1C104A042	CHIP CAPACITOR	1	
C3914	ECJ1VB1A105K	CHIP CAPACITOR	1	
C3915	F1H1C104A042	CHIP CAPACITOR	1	
C3916	F1H1C104A042	CHIP CAPACITOR	1	
C3917	ECEA0JKA101B	ALU ELEC CAPACITOR	1	
C3918	ECEA0JKA220B	ALU ELEC CAPACITOR	1	
C3920	F1H1H1030006	CHIP CAPACITOR	1	
C3921	F1H1C104A042	CHIP CAPACITOR	1	
C3922	F1H1H1030006	CHIP CAPACITOR	1	
C3924	F1H1C104A042	CHIP CAPACITOR	1	
C3926	F1H1C104A042	CHIP CAPACITOR	1	
C3927	F1H1C104A042	CHIP CAPACITOR	1	
C3928	F1H1C104A042	CHIP CAPACITOR	1	
C3929	ECEA0JKA221B	ALU ELEC CAPACITOR	1	
C3934	F1H1C104A042	CHIP CAPACITOR	1	
C3936	F2A0J471A016	ALU ELEC CAPACITOR	1	
C3937	F2A0J471A016	ALU ELEC CAPACITOR	1	
C3938	ECEA0JKA101B	ALU ELEC CAPACITOR	1	
C3939	ECEA0JKA220B	ALU ELEC CAPACITOR	1	
C3940	F1H1H330A736	CHIP CAPACITOR	1	
C3946	F1H1C104A042	CHIP CAPACITOR	1	
C3947	F1H1C104A042	CHIP CAPACITOR	1	
C3948	F1H1C104A042	CHIP CAPACITOR	1	
C3949	ECEA0JKA101B	ALU ELEC CAPACITOR	1	
C3950	ECEA0JKA220B	ALU ELEC CAPACITOR	1	
C3955	F1H1H1030006	CHIP CAPACITOR	1	
C3956	F1H1H1030006	CHIP CAPACITOR	1	
C4001	ECEA1CKA100B	ALU ELEC CAPACITOR	1	
C4002	ECEA1CKA100B	ALU ELEC CAPACITOR	1	
C4004	ECEA1CKA100B	ALU ELEC CAPACITOR	1	
C4005	ECEA0JKA101B	ALU ELEC CAPACITOR	1	
C4007	F1H1H222A219	CHIP CAPACITOR	1	
C4008	F1H1H182A219	CHIP CAPACITOR	1	
C4009	ECEA0JKA220B	ALU ELEC CAPACITOR	1	
C4010	ECEA1EKA4R7B	ALU ELEC CAPACITOR	1	
C4011	ECEA0JKA470B	ALU ELEC CAPACITOR	1	
C4012	F1H1H1030007	CHIP CAPACITOR	1	
C4014	ECEA1HKA4R7B	ALU ELEC CAPACITOR	1	
C4015	F1H1H682A219	CHIP CAPACITOR	1	
C4016	ECEA0JKA220B	ALU ELEC CAPACITOR	1	
C4017	ECEA1HKA3R3B	ALU ELEC CAPACITOR	1	
C4018	F1H1H182A219	CHIP CAPACITOR	1	
C4020	ECQB1H333JF3	PLAST FILM CAPACITOR	1	
C4021	ECJ1VC1H471J	CHIP CAPACITOR	1	
C4022	ECA0JM101B	ALU ELEC CAPACITOR	1	

Ref. No.	Part No.	Part Name & Description	PCS	Remarks
C4023	F1H1E223A029	CHIP CAPACITOR	1	
C4024	F1H1H182A219	CHIP CAPACITOR	1	
C4025	ECJ2VF1H103Z	CHIP CAPACITOR	1	
C4101	ECJ1VB1H471K	CHIP CAPACITOR	1	
C4102	ECJ1VB1H471K	CHIP CAPACITOR	1	
C4105	F1H1H1010005	CHIP CAPACITOR	1	
C4106	F1H1H1010005	CHIP CAPACITOR	1	
C4107	ECJ1VB1H471K	CHIP CAPACITOR	1	
C4108	ECJ1VB1H471K	CHIP CAPACITOR	1	
C4111	F1H1H1010005	CHIP CAPACITOR	1	
C4112	F1H1H1010005	CHIP CAPACITOR	1	
C4501	ECEA1CKA100B	ALU ELEC CAPACITOR	1	
C4502	ECEA1CKA100B	ALU ELEC CAPACITOR	1	
C4503	ECEA1CKA100B	ALU ELEC CAPACITOR	1	
C4504	ECQB1H473JF3	PLAST FILM CAPACITOR	1	
C4505	ECEA0JKA330B	ALU ELEC CAPACITOR	1	
C4506	ECEA1CKA100B	ALU ELEC CAPACITOR	1	
C4508	ECEA1CKA100B	ALU ELEC CAPACITOR	1	
C4509	ECEA0JKA220B	ALU ELEC CAPACITOR	1	
C4510	ECQB1H153JF3	PLAST FILM CAPACITOR	1	
C4511	F1H1C333A041	CHIP CAPACITOR	1	
C4512	F1H1H1030006	CHIP CAPACITOR	1	
C4513	F1H1H1030006	CHIP CAPACITOR	1	
C4515	F1H1E104A030	CHIP CAPACITOR	1	
C4516	F1H1C104A042	CHIP CAPACITOR	1	
C4518	F1H1A2240004	CHIP CAPACITOR	1	
C4519	ECQB1H153JF3	PLAST FILM CAPACITOR	1	
C4520	ECEA1CKA220B	ALU ELEC CAPACITOR	1	
C4521	ECEA1CKA100B	ALU ELEC CAPACITOR	1	
C4522	ECEA0JKA330B	ALU ELEC CAPACITOR	1	
C4523	ECQB1H473JF3	PLAST FILM CAPACITOR	1	
C4524	ECEA0JKA101B	ALU ELEC CAPACITOR	1	
C4526	ECEA1CKA100B	ALU ELEC CAPACITOR	1	
C4531	ECEA1CKA470B	ALU ELEC CAPACITOR	1	
C4533	F1H1H1030007	CHIP CAPACITOR	1	
C4534	F1H1C104A042	CHIP CAPACITOR	1	
C4544	F1H1E104A030	CHIP CAPACITOR	1	
C4545	ECEA1AKA220B	ALU ELEC CAPACITOR	1	
C4546	F1J1A105A003	CHIP CAPACITOR	1	
C4547	F1J1A105A003	CHIP CAPACITOR	1	
C4801	F1H1H1030007	CHIP CAPACITOR	1	
C4803	F1H1H1010005	CHIP CAPACITOR	1	
C4804	F1H1H1010005	CHIP CAPACITOR	1	
C4805	F1H1H1020005	CHIP CAPACITOR	1	
C4806	F1H1H1020005	CHIP CAPACITOR	1	
C4917	ECEA1CKA100B	ALU ELEC CAPACITOR	1	
C4918	ECEA1CKA100B	ALU ELEC CAPACITOR	1	
C4919	ECEA1VKA100B	ALU ELEC CAPACITOR	1	
C4920	ECEA1VKA100B	ALU ELEC CAPACITOR	1	
C4922	ECEA1VKA100B	ALU ELEC CAPACITOR	1	
C4923	ECEA1VKA100B	ALU ELEC CAPACITOR	1	
C4924	ECEA1VKA100B	ALU ELEC CAPACITOR	1	
C4925	ECEA1VKA100B	ALU ELEC CAPACITOR	1	
C4926	ECJ1VB1A105K	CHIP CAPACITOR	1	
C4927	ECEA1CKA101B	ALU ELEC CAPACITOR	1	
C4928	F2A1H1R0A236	ALU ELEC CAPACITOR	1	
C4929	F2A1H1R0A236	ALU ELEC CAPACITOR	1	
C4930	F2A1H1R0A236	ALU ELEC CAPACITOR	1	
C4931	F2A1H1R0A236	ALU ELEC CAPACITOR	1	
C4932	F2A1H1R0A236	ALU ELEC CAPACITOR	1	
C4934	F2A1H1R0A236	ALU ELEC CAPACITOR	1	
C4935	ECEA1CKA101B	ALU ELEC CAPACITOR	1	
C4936	F2A1H1R0A236	ALU ELEC CAPACITOR	1	
C4937	F2A1H1R0A236	ALU ELEC CAPACITOR	1	
C4938	F2A1H1R0A236	ALU ELEC CAPACITOR	1	
C4939	F2A1H1R0A236	ALU ELEC CAPACITOR	1	
C4940	F2A1H1R0A236	ALU ELEC CAPACITOR	1	
C4942	F1H1E104A030	CHIP CAPACITOR	1	
C4943	F2A1H1R0A236	ALU ELEC CAPACITOR	1	
C4944	ECEA1CKA470B	ALU ELEC CAPACITOR	1	
C4945	F2A1C221A019	ALU ELEC CAPACITOR	1	
C5001	F1H1H1030006	CHIP CAPACITOR	1	
C5002	F1H1H1030006	CHIP CAPACITOR	1	

Ref. No.	Part No.	Part Name & Description	PCS	Remarks
C5003	F1H1H1030006	CHIP CAPACITOR	1	
C5004	F1H1H1030006	CHIP CAPACITOR	1	
C5005	F1H1E104A030	CHIP CAPACITOR	1	
C5006	ECEA0JKA470B	ALU ELEC CAPACITOR	1	
C5007	F1H1C104A042	CHIP CAPACITOR	1	
C6001	ECJ1VC1H180J	CHIP CAPACITOR	1	
C6002	ECJ1VC1H220J	CHIP CAPACITOR	1	
C6005	ECEA1CKA100B	ALU ELEC CAPACITOR	1	
C6006	F1H1E104A030	CHIP CAPACITOR	1	
C6007	ECJ1VC1H220J	CHIP CAPACITOR	1	
C6008	ECJ1VC1H471J	CHIP CAPACITOR	1	
C6009	F1H1H1030007	CHIP CAPACITOR	1	
C6010	ECJ1VC1H220J	CHIP CAPACITOR	1	
C6014	F1H1H1030007	CHIP CAPACITOR	1	
C6015	F1H1C333A041	CHIP CAPACITOR	1	
C6016	F1H1H1020005	CHIP CAPACITOR	1	
C6017	F1H1C104A042	CHIP CAPACITOR	1	
C6018	F1H1C104A042	CHIP CAPACITOR	1	
C6020	ECJ2VF1H104Z	CHIP CAPACITOR	1	
C6101	ECEA0JKA221B	ALU ELEC CAPACITOR	1	
C6103	F1H1A1050029	CHIP CAPACITOR	1	
C6110	F1H1A1050029	CHIP CAPACITOR	1	
C6111	ECJ1VB1H561K	CHIP CAPACITOR	1	
C6115	F1H1H1030007	CHIP CAPACITOR	1	
C6116	F1H1C104A042	CHIP CAPACITOR	1	
C6121	F1H1H330A736	CHIP CAPACITOR	1	
C6301	F1H1E104A030	CHIP CAPACITOR	1	
C6302	F1H1H1030007	CHIP CAPACITOR	1	
C6303	ECEA1AKA470B	ALU ELEC CAPACITOR	1	
C6308	ECEA0JKA470B	ALU ELEC CAPACITOR	1	
C6401	ECJ1VC1H221J	CHIP CAPACITOR	1	
C6402	ECJ1VC1H221J	CHIP CAPACITOR	1	
C7301	F1H1H1030007	CHIP CAPACITOR	1	*2
C7302	ECEA0JKA101B	ALU ELEC CAPACITOR	1	*1
C7303	F1H1H1030007	CHIP CAPACITOR	1	*2
C7305	F1H1H330A736	CHIP CAPACITOR	1	*2
C7306	F1H1H330A736	CHIP CAPACITOR	1	*2
C7307	F1H1H332A219	CHIP CAPACITOR	1	*1
C7308	ECJ1VC1H681J	CHIP CAPACITOR	1	*1
C7308	D0GB822JA057	CHIP RESISTOR	1	*2
C7309	F1H1H332A219	CHIP CAPACITOR	1	*1
C7310	ECJ1VC1H681J	CHIP CAPACITOR	1	*1
C7311	F1H1H1030007	CHIP CAPACITOR	1	
C7312	F1H1C104A042	CHIP CAPACITOR	1	
C7313	ECJ1VF1C474Z	CHIP CAPACITOR	1	*1
C7314	F1H1H1030006	CHIP CAPACITOR	1	*1
C7314	F1H1C104A042	CHIP CAPACITOR	1	*2
C7315	F1H1H9R0A735	CHIP CAPACITOR	1	*1
C7316	F1H1E104A030	CHIP CAPACITOR	1	*2
C7318	ECEA0JKA470B	ALU ELEC CAPACITOR	1	
C7319	F1J1A105A003	CHIP CAPACITOR	1	
C7320	F1J1A105A003	CHIP CAPACITOR	1	
C7321	F1H1H472A219	CHIP CAPACITOR	1	*1
C7322	ECJ1VF1C474Z	CHIP CAPACITOR	1	*1
C7323	F1H1E104A030	CHIP CAPACITOR	1	*2
C7324	ECJ1VB1H152K	CHIP CAPACITOR	1	*1
C7325	F1H1H1030006	CHIP CAPACITOR	1	*1
C7325	F1H1C104A042	CHIP CAPACITOR	1	*2
C7326	F1H1A1050029	CHIP CAPACITOR	1	*1
C7328	ECJ1VF1C474Z	CHIP CAPACITOR	1	*1
C7328	F1H1E104A030	CHIP CAPACITOR	1	*2
C7329	ECJ1VF1C474Z	CHIP CAPACITOR	1	*1
C7330	F1H1C104A042	CHIP CAPACITOR	1	*1
C7331	F1J1C4740012	CHIP CAPACITOR	1	*1
C7331	F1J1A105A003	CHIP CAPACITOR	1	*2
C7335	F1H1E104A030	CHIP CAPACITOR	1	*1
C7341	F1H1H472A219	CHIP CAPACITOR	1	*2
C7342	F1H1H472A219	CHIP CAPACITOR	1	*2
C7343	ECEA0JKA221B	ALU ELEC CAPACITOR	1	*2
C7401	F1H1C104A042	CHIP CAPACITOR	1	
C7402	F1H1C104A042	CHIP CAPACITOR	1	
C7403	ECJ1VB1A105K	CHIP CAPACITOR	1	
C7404	ECJ1VB1A105K	CHIP CAPACITOR	1	

Ref. No.	Part No.	Part Name & Description	PCS	Remarks
C7405	ECJ1VB1A105K	CHIP CAPACITOR	1	
C7406	ECJ1VB1A105K	CHIP CAPACITOR	1	
C7407	ECJ1VB1A105K	CHIP CAPACITOR	1	
C7408	F1H1C104A042	CHIP CAPACITOR	1	
C7409	F1H1C104A042	CHIP CAPACITOR	1	
C7410	ECJ1VB1A105K	CHIP CAPACITOR	1	
C7411	ECJ1VB1A105K	CHIP CAPACITOR	1	
C7501	F1H1E104A030	CHIP CAPACITOR	1	
C7502	ECEA0JKA470B	ALU ELEC CAPACITOR	1	
C7505	F1H1E104A030	CHIP CAPACITOR	1	
C7506	F1H1H104A731	CHIP CAPACITOR	1	
C7507	F1H1H1010005	CHIP CAPACITOR	1	
C7508	F1H1E104A030	CHIP CAPACITOR	1	
C7603	ECEA0JKA101B	ALU ELEC CAPACITOR	1	
C7604	ECEA0JKA101B	ALU ELEC CAPACITOR	1	
C7605	F1H1H1030007	CHIP CAPACITOR	1	
C7606	F1H1H1030007	CHIP CAPACITOR	1	
C7613	ECJ1VC1H221J	CHIP CAPACITOR	1	
C7618	F1H1E104A030	CHIP CAPACITOR	1	
C7620	ECEA1CKA470B	ALU ELEC CAPACITOR	1	
C7752	ECEA0JKA221B	ALU ELEC CAPACITOR	1	
C7807	F1H1H1030007	CHIP CAPACITOR	1	
C7819	F1H1H1030007	CHIP CAPACITOR	1	
C7825	F1H1H330A736	CHIP CAPACITOR	1	
C7828	F1H1H330A736	CHIP CAPACITOR	1	
C7838	F1H1E104A030	CHIP CAPACITOR	1	
C7839	ECEA1HKA010B	ALU ELEC CAPACITOR	1	
C7901	F2A1V221A117	ALU ELEC CAPACITOR	1	
C7902	ECQB1H392KF3	PLAST FILM CAPACITOR	1	
C7904	F2A1V470A117	ALU ELEC CAPACITOR	1	
C7905	F2A1H2200032	ALU ELEC CAPACITOR	1	
C7906	F2A1H2200032	ALU ELEC CAPACITOR	1	
C7907	F2A1A2210063	ALU ELEC CAPACITOR	1	
C9111	ECJ1VB1A105K	CHIP CAPACITOR	1	
C9112	F1H1E104A030	CHIP CAPACITOR	1	
C9116	F1J0J2250003	CHIP CAPACITOR	1	
C9117	ECA1AHG102B	ALU ELEC CAPACITOR	1	
C9118	ECEA1CKA470B	ALU ELEC CAPACITOR	1	
C9135	F1H1H1030007	CHIP CAPACITOR	1	
C9138	ECJ1VB1H331K	CHIP CAPACITOR	1	
C9156	F1H1H1030007	CHIP CAPACITOR	1	
C9157	F1J0J2250003	CHIP CAPACITOR	1	
C9158	F1H1E104A030	CHIP CAPACITOR	1	
C9301	F1H1H104A731	CHIP CAPACITOR	1	
C9302	ECQV1H104JL3	PLAST FILM CAPACITOR	1	
C9303	ECA1AM102B	ALU ELEC CAPACITOR	1	
C9305	ECEA1CKA100B	ALU ELEC CAPACITOR	1	
C9306	ECJ1VC1H102J	CHIP CAPACITOR	1	
C9309	ECJ1VC1H121J	CHIP CAPACITOR	1	
C9310	ECJ1VC1H121J	CHIP CAPACITOR	1	
C9311	F2A1C470A637	ALU ELEC CAPACITOR	1	
C9312	F2A1C470A637	ALU ELEC CAPACITOR	1	
C9315	F1H1H1020005	CHIP CAPACITOR	1	
C9316	F1H1H1020005	CHIP CAPACITOR	1	
C9336	F1H1H104A731	CHIP CAPACITOR	1	
C9337	ECEA0JKA220B	ALU ELEC CAPACITOR	1	
C9701	ECJ1VB1A105K	CHIP CAPACITOR	1	
C9703	ECJ1VB1A105K	CHIP CAPACITOR	1	
C9704	F1H1H1030007	CHIP CAPACITOR	1	
C9705	F1H1H1030007	CHIP CAPACITOR	1	
C9706	ECEA0JKA101B	ALU ELEC CAPACITOR	1	
C9707	F1H1E104A030	CHIP CAPACITOR	1	
C9708	F1H1H1030007	CHIP CAPACITOR	1	
C9710	ECJ1VC1H100D	CHIP CAPACITOR	1	
C9711	ECJ1VC1H100D	CHIP CAPACITOR	1	
C9712	ECJ1VC1H100D	CHIP CAPACITOR	1	
C9713	F1H1H104A748	CHIP CAPACITOR	1	
C9714	F1H1H104A748	CHIP CAPACITOR	1	
C9715	F1H1H1030007	CHIP CAPACITOR	1	
C9716	F1H1H1030007	CHIP CAPACITOR	1	
C9717	F1H1H1030007	CHIP CAPACITOR	1	
C9718	F1H1H1030007	CHIP CAPACITOR	1	
C9719	F1H1H1030007	CHIP CAPACITOR	1	

Ref. No.	Part No.	Part Name & Description	PCS	Remarks
C9720	F1H1H104A731	CHIP CAPACITOR	1	
C9721	ECJ1VB1A105K	CHIP CAPACITOR	1	
C9722	F1H1C104A042	CHIP CAPACITOR	1	
C9723	F2A0J470A599	ALU ELEC CAPACITOR	1	
C9724	F1H1E104A030	CHIP CAPACITOR	1	
C9725	F1H1A1050029	CHIP CAPACITOR	1	
C9726	F1H1E104A030	CHIP CAPACITOR	1	
C9733	F1H1H1010005	CHIP CAPACITOR	1	
C9735	F1H1H1030007	CHIP CAPACITOR	1	
C9736	F1H1H1030007	CHIP CAPACITOR	1	
C9737	F4D55473A013	ALU ELEC CAPACITOR	1	
C9738	ECJ1VC1H180J	CHIP CAPACITOR	1	
C9739	ECJ1VC1H180J	CHIP CAPACITOR	1	
C9741	F1H1H104A731	CHIP CAPACITOR	1	
C9742	ECJ1VC1H220J	CHIP CAPACITOR	1	
C9745	ECJ1VC1H180J	CHIP CAPACITOR	1	
C9747	F1H1C104A042	CHIP CAPACITOR	1	
C9748	F1H1C104A042	CHIP CAPACITOR	1	
C9749	F1H1H104A731	CHIP CAPACITOR	1	
C9750	F1H1H104A731	CHIP CAPACITOR	1	
C9752	F1H1H4700004	CHIP CAPACITOR	1	
C9753	F1H1H4700004	CHIP CAPACITOR	1	
C9754	F1H1A1050029	CHIP CAPACITOR	1	
C9756	F1H1H1010005	CHIP CAPACITOR	1	
C9757	ECJ1VB1A105K	CHIP CAPACITOR	1	
C9758	ECJ1VB1A105K	CHIP CAPACITOR	1	
C9768	ECA1CM471B	ALU ELEC CAPACITOR	1	
C9778	F1H1H1030007	CHIP CAPACITOR	1	
C9779	F1H1H1030007	CHIP CAPACITOR	1	
C9780	F1H1H1030007	CHIP CAPACITOR	1	
C9781	F1H1H1030007	CHIP CAPACITOR	1	
C9785	ECEA0JKA221B	ALU ELEC CAPACITOR	1	
C9788	F1H1H1030007	CHIP CAPACITOR	1	
C9790	F1J0J475A008	CHIP CAPACITOR	1	
D1101	ERZVA5V471	SURGE ABSORBER	1	⚠
D1102	B0EALR000016	DIODE	1	
D1103	B0EALR000016	DIODE	1	
D1104	B0EALR000016	DIODE	1	
D1105	B0EALR000016	DIODE	1	
D1106	B0HADV000001	DIODE	1	
D1107	MAZ42000MF	DIODE	1	
D1108	B0HAGM000008	DIODE	1	
D1109	MAZ73000BF	ZENER DIODE	1	
D1203	B0JBSL000002	DIODE	1	
D1204	B0JCPD000021	DIODE	1	
D1205	B0JCPE000015	DIODE	1	
D1208	B0JCPE000015	DIODE	1	
D1501	B3EA00000072	DIODE	1	
D2001	B0AACK000004	SWITCHING DIODE	1	
D2002	B0AACK000004	SWITCHING DIODE	1	
D2502	MAZ4160NMF	DIODE	1	
D3901	B0AACK000004	SWITCHING DIODE	1	
D4501	B0AACK000004	SWITCHING DIODE	1	
D4502	MAZ4056NHF	DIODE	1	
D4901	MA2J72900L	DIODE	1	
D6306	MAZ4056NHF	DIODE	1	
D6401	B0AACK000004	SWITCHING DIODE	1	
D6402	B0ACCK000005	DIODE	1	
D7301	MA2C165001VT	DIODE	1	*2
D7502	B3ACA0000273	DIODE	1	
D7503	B3ADA0000173	DIODE	1	
D7504	B3AAA0000752	DIODE	1	
D7807	MAZ4300NMF	DIODE	1	
D7901	B0BA03600021	DIODE	1	
D7903	B0AADM000003	DIODE	1	
D7904	B0AADM000003	DIODE	1	
D7905	B0JAMD000026	DIODE	1	
D7906	MAZ4220NLF	DIODE	1	
D7907	MAZ4180NHF	DIODE	1	
D7908	MA2C165001VT	DIODE	1	
D9104	MAZ40390HF	DIODE	1	
D9105	B0AACK000004	SWITCHING DIODE	1	
D9106	B0JACE000001	DIODE	1	
D9107	B0AACK000004	SWITCHING DIODE	1	
DP7501	A2BD00000157	FL DISPLAY	1	
F1101	K5D202BK0005	FUSE	1	⚠
FH1101	EYF52BCY	FUSE HOLDER	1	
FH1102	EYF52BCY	FUSE HOLDER	1	
IC1101	C0DACZZ00009	INTEGRATED CIRCUIT	1	
IC1201	C0DBAKG00007	POWER SUPPLY IC	1	
IC1202	C0DAEMZ00001	VOLTAGE REGULATOR	1	
IC1203	C0DAAJG00007	POWER SUPPLY IC	1	
IC1204	C0DAAJG00007	POWER SUPPLY IC	1	
IC1501	B3NAA0000118	GAP SENSOR	1	
IC1502	B3NAA0000118	GAP SENSOR	1	
IC2501	C1AB00001767	MOTOR DRIVE IC	1	
IC3001	C1AB00002084	INTEGRATED CIRCUIT	1	
IC3002	C0CBCDD00026	POWER SUPPLY IC	1	
IC3901	C1AB00002379	INTEGRATED CIRCUIT	1	
IC3905	C1AB00001340	INTEGRATED CIRCUIT	1	
IC4501	AN3656NFBPBV	INTEGRATED CIRCUIT	1	
IC6001	C2CBHF000469	VHS MICON IC	1	
IC6302	C0CBCDC00020	POWER SUPPLY IC	1	
IC7301	C0ZBZ0001081	INTEGRATED CIRCUIT	1	*1
IC7301	C1AB00002225	INTEGRATED CIRCUIT	1	*2
IC7401	C0CBCDD00025	POWER SUPPLY IC	1	
IC7402	C0CBCDD00025	POWER SUPPLY IC	1	
IC7403	C0CBCDD00025	POWER SUPPLY IC	1	
IC7501	C0HBB0000044	DISPLAY DRIVER IC	1	
IC7502	B3RAD0000073	IR RECEIVER	1	
IC9102	C0CBCDD00025	POWER SUPPLY IC	1	
IC9106	C0CBCBD00048	POWER SUPPLY IC	1	
IC9301	C0DBAHD00013	VOLTAGE REGULATOR	1	
IC9302	C0ABBB000216	AMPLIFIERS	1	
IC9305	C0ABBB000119	INTEGRATED CIRCUIT	1	
IC9700	B3ZAZ0000017	OPTICAL LINK	1	
IC9702	C0EBE0000194	VOLTAGE RESET IC	1	
IC9703	C0EBJ0000336	RESET IC	1	
IC9704	C2CBJG000724	MICON IC	1	
IC9705	RFKFM6016KT	EEPROM IC	1	[SPC]
IC9706	C0EBE0000504	INTEGRATED CIRCUIT	1	
IP1221	ERJ8GEY0R00V	CHIP RESISTOR	1	
IP1231	ERJ8GEY0R00V	CHIP RESISTOR	1	
IP4901	K5H5012A0010	FUSE	1	
IP7901	D0YBR0000020	CHIP RESISTOR	1	
IP9102	K5H5012A0010	FUSE	1	
J1	VEE0U97	EARTH WIRE	1	
JK3901	K1FB121B0018	CONNECTOR (ES30V)	1	
JK3902	K1FB121B0018	CONNECTOR (ES30V)	1	
JK4801	K2HA307A0009	CONNECTOR	1	
JK4802	K1CB104A0017	CONNECTOR	1	
JK4901	K2HA304B0007	CONNECTOR	1	
JK4902	K1CB105B0041	CONNECTOR	1	
JK4903	K2HA1YYB0002	CONNECTOR	1	
JK9301	K2HA204B0147	CONNECTOR	1	
K3005	D0YBR0000020	CHIP RESISTOR	1	
K3905	D0YBR0000020	CHIP RESISTOR	1	
K3906	D0YBR0000020	CHIP RESISTOR	1	
K3907	D0YBR0000020	CHIP RESISTOR	1	
K3908	ERJ6GEY0R00Z	CHIP RESISTOR	1	
K3909	D0YBR0000020	CHIP RESISTOR	1	
K3910	D0YBR0000020	CHIP RESISTOR	1	
K4502	D0YBR0000020	CHIP RESISTOR	1	
K4905	D0YBR0000020	CHIP RESISTOR	1	
K7306	D0YBR0000020	CHIP RESISTOR	1	*2
K7307	D0YBR0000020	CHIP RESISTOR	1	*2
K7401	D0YBR0000020	CHIP RESISTOR	1	
K7801	D0YBR0000020	CHIP RESISTOR	1	
K7802	D0YBR0000020	CHIP RESISTOR	1	
K9302	ERJ6GEY0R00Z	CHIP RESISTOR	1	
L1101	G0B233D00001	LINE FILTER	1	
L1102	G0B233D00001	LINE FILTER	1	
L1202	G0A220GA0026	CHOKE COIL RADIAL	1	
L1204	G0A220ZA0042	CHOKE COIL	1	
L1205	G0A100H00025	CHOKE COIL	1	
L1207	G0A100H00025	CHOKE COIL	1	

Ref. No.	Part No.	Part Name & Description	PCS	Remarks
L1209	G0A470ZA0042	CHOKE COIL	1	
L1210	G0A220GA0026	CHOKE COIL RADIAL	1	
L1211	G0A330ZA0042	CHOKE COIL	1	
L1214	G0A220GA0026	CHOKE COIL RADIAL	1	
L3001	G0C820JA0019	CHOKE COIL AXIAL	1	
L3002	G0C270JA0019	CHOKE COIL AXIAL	1	
L3003	G0C390JA0019	CHOKE COIL AXIAL	1	
L3004	G0C680JA0019	CHOKE COIL AXIAL	1	
L3006	G0C270JA0019	CHOKE COIL AXIAL	1	
L3007	ELJFA120KFB	CHIP INDUCTOR	1	
L4001	G0C221KA0073	FIXED INDUCTOR	1	
L4502	G0C1R2J00004	CHOKE COIL AXIAL	1	
L4503	G0C101JA0019	CHOKE COIL AXIAL	1	
L5001	G0C680JA0019	CHOKE COIL AXIAL	1	
L6103	G0C1R5JA0019	CHOKE COIL	1	
L6105	G0C680JA0019	CHOKE COIL AXIAL	1	
L7301	G0C1R0JA0019	CHOKE COIL AXIAL	1	
L7302	G0C470JA0019	CHOKE COIL AXIAL	1	*1
L7302	G0C2R2JA0019	CHOKE COIL AXIAL	1	*2
L7501	G0C220JA0019	CHOKE COIL AXIAL	1	
L7602	G0C270JA0019	CHOKE COIL AXIAL	1	
L7605	G0C2R2JA0019	CHOKE COIL AXIAL	1	
L7606	G0C390JA0019	CHOKE COIL AXIAL	1	
L7901	G0C390JA0019	CHOKE COIL AXIAL	1	
L9105	G0C680JA0019	CHOKE COIL AXIAL	1	
L9106	G0C820JA0019	CHOKE COIL AXIAL	1	
L9701	G0C390JA0019	CHOKE COIL AXIAL	1	
L9702	G0A220GA0026	CHOKE COIL RADIAL	1	
LB1102	EXCELDR35V	BEAD CORES	1	
LB1105	EXCELDR35V	BEAD CORES	1	
LB1203	ERJ6GEY0R00Z	CHIP RESISTOR	1	
LB1204	ERJ6GEY0R00Z	CHIP RESISTOR	1	
LB1207	J0JHC0000048	BEAD CORE	1	
LB3901	J0JGC0000020	BEAD CORE	1	
LB4002	J0JBC0000070	CHIP INDUCTOR	1	
LB4003	J0JBC0000070	CHIP INDUCTOR	1	
LB4101	J0JBC0000041	BEAD CORE	1	
LB4102	J0JBC0000041	BEAD CORE	1	
LB4103	J0JBC0000041	BEAD CORE	1	
LB4104	J0JBC0000041	BEAD CORE	1	
LB4105	J0JBC0000041	BEAD CORE	1	
LB4106	J0JBC0000041	BEAD CORE	1	
LB4203	D0YBR0000020	CHIP RESISTOR	1	
LB4801	D0YBR0000020	CHIP RESISTOR	1	
LB4802	D0YBR0000020	CHIP RESISTOR	1	
LB4803	D0YBR0000020	CHIP RESISTOR	1	
LB4901	D0YBR0000020	CHIP RESISTOR	1	
LB4902	D0YBR0000020	CHIP RESISTOR	1	
LB4903	D0YBR0000020	CHIP RESISTOR	1	
LB4904	D0YBR0000020	CHIP RESISTOR	1	
LB4905	D0YBR0000020	CHIP RESISTOR	1	
LB4906	D0YBR0000020	CHIP RESISTOR	1	
LB7301	ERJ6GEY0R00Z	CHIP RESISTOR	1	*2
LB7302	J0JBC0000011	BEAD CORE	1	*2
LB7303	ERJ6GEY0R00Z	CHIP RESISTOR	1	*2
LB7401	J0JHC0000032	BEAD CORE	1	
LB7802	J0JBC0000011	BEAD CORE	1	
LB7803	J0JBC0000011	BEAD CORE	1	
LB7804	J0JBC0000011	BEAD CORE	1	
LB7901	D0YBR0000020	CHIP RESISTOR	1	
LB7902	D0YBR0000020	CHIP RESISTOR	1	
LB7903	D0YBR0000020	CHIP RESISTOR	1	
LB9700	D0YBR0000020	CHIP RESISTOR	1	
LB9701	J0JHC0000032	BEAD CORE	1	
LB9702	D0YBR0000020	CHIP RESISTOR	1	
LB9703	D0YBR0000020	CHIP RESISTOR	1	
LB9704	J0JKB0000012	BEAD CORE	1	
LB9705	D0YBR0000020	CHIP RESISTOR	1	
LB9706	J0JCC0000060	BEAD CORE	1	
LB9707	J0JKB0000012	BEAD CORE	1	
LB9708	J0JKB0000003	BEAD CORE	1	
LB9709	D0YBR0000020	CHIP RESISTOR	1	
LB9710	J0JHC0000021	BEAD CORE	1	

Ref. No.	Part No.	Part Name & Description	PCS	Remarks
LB9711	J0JHC0000021	BEAD CORE	1	
P1101	K2AA2H000007	AC INLET	1	⚠
P1531	K1KA02A00375	CONNECTOR	1	
P2501	K1MN07A00030	CONNECTOR	1	
P2571	K1KA08A00355	CONNECTOR	1	
P4001	K1KB02A00035	CONNECTOR	1	
P4002	K1MN06A00042	CONNECTOR	1	
P5001	K1MN09A00029	CONNECTOR	1	
P6001	K1KB15AA0032	CONNECTOR 15POL.	1	
P6002	K1KB15AA0032	CONNECTOR 15POL.	1	
P6003	K1KB19AA0032	CONNECTOR 19POL.	1	
P66802	K1MY20BA0049	CONNECTOR	1	
P66803	K2HZ104B0016	CONNECTOR	1	
P66804	K1KA06AA0104	CONNECTOR	1	
P9101	K1KA15A00118	CONNECTOR	1	
P9102	K1KA15A00118	CONNECTOR	1	
P9103	K1KA19A00007	CONNECTOR	1	
P9701	K1KA03AA0180	CONNECTOR	1	
P9703	K1KY64A00002	CONNECTOR	1	
PP4801	K1KA10B00196	CONNECTOR	1	
PP7501	K1KA10B00196	CONNECTOR	1	
PP7502	K1KA10B00196	CONNECTOR	1	
PP7503	K1KA10B00196	CONNECTOR	1	
PS6001	K1KB10B00053	CONNECTOR	1	
PS6002	K1KB10B00053	CONNECTOR	1	
PS9701	K1KB10B00045	CONNECTOR	1	
PS9702	K1KB10B00053	CONNECTOR	1	
Q1101	B3PBA0000237	PHOTO COUPLER	1	⚠
Q1201	B1DHED000008	TRANSISTOR	1	
Q1202	B1DHDD000022	TRANSISTOR	1	
Q1501	PNB2303M01VT	PHOTO TRANSISTOR	1	
Q1502	PNB2303M01VT	PHOTO TRANSISTOR	1	
Q3002	2SD1819A0L	TRANSISTOR	1	
Q4001	2SD114900L	TRANSISTOR	1	
Q4002	2SD1819A0L	TRANSISTOR	1	
Q4003	2SD0602ARL	TRANSISTOR	1	
Q4004	2SB0710A0L	TRANSISTOR	1	
Q4501	B1AAGD000016	TRANSISTOR	1	
Q4502	2SB0710A0L	TRANSISTOR	1	
Q4901	2SB0710A0L	TRANSISTOR	1	
Q6102	2SD1819A0L	TRANSISTOR	1	
Q6103	2SD1819A0L	TRANSISTOR	1	
Q6104	2SB1218A0L	SS-TRANSISTOR	1	
Q6305	2SD0601A0L	TRANSISTOR	1	
Q6401	2SD1819A0L	TRANSISTOR	1	
Q6402	2SD1819A0L	TRANSISTOR	1	
Q6403	2SD1819A0L	TRANSISTOR	1	
Q6404	2SD1819A0L	TRANSISTOR	1	
Q7502	2SD0601A0L	TRANSISTOR	1	
Q7901	B1BABK000001	POWER TRANSISTOR	1	
Q9101	2SD1819A0L	TRANSISTOR	1	
Q9106	2SD0601A0L	TRANSISTOR	1	
Q9701	2SB1218A0L	SS-TRANSISTOR	1	
Q9702	2SD1819A0L	TRANSISTOR	1	
Q9703	2SD1819A0L	TRANSISTOR	1	
Q9704	2SB1321A0A	TRANSISTOR	1	
Q9705	2SB1218A0L	SS-TRANSISTOR	1	
Q9706	2SD1819A0L	TRANSISTOR	1	
QR1202	B1GBCFNN0009	TRANSISTOR	1	
QR1203	B1GBCFNN0009	TRANSISTOR	1	
QR4003	B1GBCFJJ0007	TRANSISTOR	1	
QR4004	B1GDCFJJ0008	DIGITAL TRANSISTOR	1	
QR4005	B1GBCFNN0009	TRANSISTOR	1	
QR4501	B1GBCFJJ0007	TRANSISTOR	1	
QR4901	B1GBCFNN0009	TRANSISTOR	1	
QR4902	B1GDCFJJ0008	DIGITAL TRANSISTOR	1	
QR4903	UNR521600L	TRANSISTOR	1	
QR4904	UNR521600L	TRANSISTOR	1	
QR4905	UNR521600L	TRANSISTOR	1	
QR4906	UNR521600L	TRANSISTOR	1	
QR4911	B1GDCFNN0007	TRANSISTOR	1	
QR4912	UNR521600L	TRANSISTOR	1	
QR4913	UNR521600L	TRANSISTOR	1	

Ref. No.	Part No.	Part Name & Description	PCS	Remarks
QR4914	B1GBCFNN0009	TRANSISTOR	1	
QR4915	B1GBCFJJ0007	TRANSISTOR	1	
QR6402	B1GBCFJA0006	TRANSISTOR	1	
QR6403	B1GBCFJA0006	TRANSISTOR	1	
QR7502	B1GBCFJJ0007	TRANSISTOR	1	
QR7503	B1GBCFJJ0007	TRANSISTOR	1	
QR7504	B1GBCFJJ0007	TRANSISTOR	1	
QR7803	B1GBCFNN0009	TRANSISTOR	1	
QR7804	B1GDCFLL0012	TRANSISTOR	1	
QR7901	B1GBCFJN0009	TRANSISTOR	1	
QR9301	B1GDCFJJ0008	DIGITAL TRANSISTOR	1	
QR9304	UNR521600L	TRANSISTOR	1	
QR9305	UNR521600L	TRANSISTOR	1	
QR9701	B1GBCFLL0012	TRANSISTOR	1	
QR9703	B1GBCFNA0010	TRANSISTOR	1	
R1101	ERDS2FJ105T	CARBON RESISTOR	1	
R1102	ERDS2FJ105T	CARBON RESISTOR	1	
R1103	ERG2SJ683E	SOLID RESISTOR	1	
R1104	ERG2SJ221E	METAL OXIDE RESISTOR	1	
R1105	ERX12SJR47E	METAL RESISTOR	1	
R1106	ERG12SJ180E	METAL OXIDE RESISTOR	1	
R1107	ERDS2TJ474T	CARBON RESISTOR	1	
R1108	ERDS2TJ474T	CARBON RESISTOR	1	
R1207	D0GB513JA057	CHIP RESISTOR	1	
R1208	D1BFR0270001	RESISTOR ARRAY	1	
R1213	D1BB12020002	CHIP RESISTOR	1	
R1214	D1BB5600A010	CHIP RESISTOR	1	
R1215	D1BB20010002	CHIP RESISTOR	1	
R1216	D0GB222JA057	CHIP RESISTOR	1	
R1217	D0GB221JA057	CHIP RESISTOR	1	
R1218	D0GB222JA057	CHIP RESISTOR	1	
R1220	D1BB10020004	CHIP RESISTOR	1	
R1221	D1BB68000002	CHIP RESISTOR	1	
R1222	D1BB2701A010	CHIP RESISTOR	1	
R1225	D0GB104JA057	CHIP RESISTOR	1	
R1226	D1BB4301A010	CHIP RESISTOR	1	
R1227	D1BB1201A010	CHIP RESISTOR	1	
R1228	D1BB1001A010	CHIP RESISTOR	1	
R1231	ERJ3GEYF362V	CHIP RESISTOR	1	
R1232	ERJ3GEYF181V	CHIP RESISTOR	1	
R1233	D1BB1001A010	CHIP RESISTOR	1	
R1235	D0GB104JA057	CHIP RESISTOR	1	
R1236	D0GB223JA057	CHIP RESISTOR	1	
R1237	D0GB223JA057	CHIP RESISTOR	1	
R1501	D0GB273JA057	CHIP RESISTOR	1	
R1502	D0GB273JA057	CHIP RESISTOR	1	
R1503	ERDS2TJ151T	CARBON RESISTOR	1	
R1511	D0GB273JA057	CHIP RESISTOR	1	
R1512	D0GB273JA057	CHIP RESISTOR	1	
R1513	ERJ6GEYJ121V	CHIP RESISTOR	1	
R2001	D0GB392JA057	CHIP RESISTOR	1	
R2002	D0GB105JA057	CHIP RESISTOR	1	
R2099	D0GB682JA057	CHIP RESISTOR	1	
R2501	ERJ6GEYJ1R2V	CHIP RESISTOR	1	
R2502	ERJ6GEYJ1R5V	CHIP RESISTOR	1	
R2503	ERDS2TJ103T	CARBON RESISTOR	1	
R2514	D0GB221JA057	CHIP RESISTOR	1	
R2515	D0GB221JA057	CHIP RESISTOR	1	
R2516	D0GB221JA057	CHIP RESISTOR	1	
R2520	D0GB183JA057	CHIP RESISTOR	1	
R2521	D0GB102JA057	CHIP RESISTOR	1	
R2551	D0GB103JA057	CHIP RESISTOR	1	
R2552	D0GB103JA057	CHIP RESISTOR	1	
R2561	D0GB102JA057	CHIP RESISTOR	1	
R2562	D0GB473JA057	CHIP RESISTOR	1	
R2563	D0GB102JA057	CHIP RESISTOR	1	
R2564	D0GB101JA057	CHIP RESISTOR	1	
R2565	D0GB101JA057	CHIP RESISTOR	1	
R3001	D0GB152JA057	CHIP RESISTOR	1	
R3002	D0GB622JA057	CHIP RESISTOR	1	
R3003	D0GB562JA057	CHIP RESISTOR	1	
R3005	D0GB122JA057	CHIP RESISTOR	1	
R3008	D0GB106JA057	CHIP RESISTOR	1	
R3010	D0GB153JA057	CHIP RESISTOR	1	
R3013	D0GB101JA057	CHIP RESISTOR	1	
R3014	D0GB101JA057	CHIP RESISTOR	1	
R3015	D0GB273JA057	CHIP RESISTOR	1	
R3016	D0GB471JA057	CHIP RESISTOR	1	
R3017	D0GB332JA057	CHIP RESISTOR	1	
R3021	D0GB102JA057	CHIP RESISTOR	1	
R3901	ERJ3GEYG750V	CHIP RESISTOR	1	
R3902	ERJ3GEYG750V	CHIP RESISTOR	1	
R3903	ERJ3GEYG750V	CHIP RESISTOR	1	
R3904	ERJ3GEYG750V	CHIP RESISTOR	1	
R3905	ERJ3GEYG750V	CHIP RESISTOR	1	
R3906	ERJ3GEYG750V	CHIP RESISTOR	1	
R3907	ERDS2TJ221T	CARBON RESISTOR	1	
R3908	D0GB750JA057	CHIP RESISTOR	1	
R3909	ERJ3GEYG750V	CHIP RESISTOR	1	
R3910	ERJ3RED750V	CHIP RESISTOR	1	
R3911	ERJ3RED750V	CHIP RESISTOR	1	
R3912	ERJ3RED750V	CHIP RESISTOR	1	
R3913	ERJ3GEYG750V	CHIP RESISTOR	1	
R3914	D0GB330JA057	CHIP RESISTOR	1	
R3915	D0YBR0000020	CHIP RESISTOR	1	
R3916	D0GB101JA057	CHIP RESISTOR	1	
R3917	D0GB101JA057	CHIP RESISTOR	1	
R3921	D0GB682JA057	CHIP RESISTOR	1	
R3931	D0GB104JA057	CHIP RESISTOR	1	
R4001	D0GB332JA057	CHIP RESISTOR	1	*1
R4001	D0GB202JA057	CHIP RESISTOR	1	*2
R4002	D0GB153JA057	CHIP RESISTOR	1	
R4003	D0GB223JA057	CHIP RESISTOR	1	*1
R4003	D0GB392JA057	CHIP RESISTOR	1	*2
R4004	D0GB472JA057	CHIP RESISTOR	1	
R4006	D0GB332JA057	CHIP RESISTOR	1	
R4007	D0GB104JA057	CHIP RESISTOR	1	
R4008	D0GB153JA057	CHIP RESISTOR	1	
R4009	D0GB271JA057	CHIP RESISTOR	1	
R4011	D0GB203JA057	CHIP RESISTOR	1	
R4012	D0GB474JA057	CHIP RESISTOR	1	
R4013	D0GB153JA057	CHIP RESISTOR	1	
R4014	D0GB103JA057	CHIP RESISTOR	1	
R4015	D0GB332JA057	CHIP RESISTOR	1	
R4016	D0GB222JA057	CHIP RESISTOR	1	
R4017	D0GB222JA057	CHIP RESISTOR	1	
R4018	ERJ6GEYJ102V	CHIP RESISTOR	1	
R4019	ERJ6GEYJ102V	CHIP RESISTOR	1	
R4101	D0GB102JA057	CHIP RESISTOR	1	
R4102	D0GB102JA057	CHIP RESISTOR	1	
R4103	D0GB102JA057	CHIP RESISTOR	1	
R4104	D0GB102JA057	CHIP RESISTOR	1	
R4105	D0GB221JA057	CHIP RESISTOR	1	
R4106	D0GB221JA057	CHIP RESISTOR	1	
R4116	D0GB221JA057	CHIP RESISTOR	1	
R4117	D0GB221JA057	CHIP RESISTOR	1	
R4505	D0GB472JA057	CHIP RESISTOR	1	
R4506	D0GB472JA057	CHIP RESISTOR	1	
R4507	D0GB472JA057	CHIP RESISTOR	1	
R4508	D0GB912JA057	CHIP RESISTOR	1	
R4509	D0GB472JA057	CHIP RESISTOR	1	
R4510	D0GB472JA057	CHIP RESISTOR	1	
R4511	D0GB912JA057	CHIP RESISTOR	1	
R4512	D0GB472JA057	CHIP RESISTOR	1	
R4513	D0GB563JA057	CHIP RESISTOR	1	
R4514	D0GB563JA057	CHIP RESISTOR	1	
R4515	D0GB683JA057	CHIP RESISTOR	1	
R4516	D0GB683JA057	CHIP RESISTOR	1	
R4517	D0GB511JA057	CHIP RESISTOR	1	
R4518	D0GB472JA057	CHIP RESISTOR	1	
R4519	D0GB472JA057	CHIP RESISTOR	1	
R4520	D0GB821JA057	CHIP RESISTOR	1	
R4521	D0GB124JA057	CHIP RESISTOR	1	
R4522	D0GB472JA057	CHIP RESISTOR	1	
R4523	D0GB511JA057	CHIP RESISTOR	1	
R4524	D0GB102JA057	CHIP RESISTOR	1	

Ref. No.	Part No.	Part Name & Description	PCS	Remarks
R4525	D0GB333JA057	CHIP RESISTOR	1	
R4526	D0GB102JA057	CHIP RESISTOR	1	
R4527	D0GB102JA057	CHIP RESISTOR	1	
R4528	D0GB472JA057	CHIP RESISTOR	1	
R4530	D0GB472JA057	CHIP RESISTOR	1	
R4532	D0GB681JA057	CHIP RESISTOR	1	
R4555	ERDS2TJ821T	CARBON RESISTOR	1	
R4557	D0GB472JA057	CHIP RESISTOR	1	
R4559	D0GB393JA057	CHIP RESISTOR	1	
R4560	D0GB682JA057	CHIP RESISTOR	1	
R4801	D0GB750JA057	CHIP RESISTOR	1	
R4802	D0GB750JA057	CHIP RESISTOR	1	
R4803	D0GB750JA057	CHIP RESISTOR	1	
R4804	D0GB102JA057	CHIP RESISTOR	1	
R4805	D0GB471JA057	CHIP RESISTOR	1	
R4806	D0GB471JA057	CHIP RESISTOR	1	
R4903	D0YBR0000020	CHIP RESISTOR	1	
R4904	D0GB223JA057	CHIP RESISTOR	1	
R4908	D0GB471JA057	CHIP RESISTOR	1	
R4909	D0GB471JA057	CHIP RESISTOR	1	
R4910	D0GB471JA057	CHIP RESISTOR	1	
R4911	D0GB471JA057	CHIP RESISTOR	1	
R4912	D1BB75R0A010	CHIP RESISTOR	1	
R4913	D1BB75R0A010	CHIP RESISTOR	1	
R4916	D1BB75R0A010	CHIP RESISTOR	1	
R4917	D1BB75R0A010	CHIP RESISTOR	1	
R4918	D1BB75R0A010	CHIP RESISTOR	1	
R4919	D1BB75R0A010	CHIP RESISTOR	1	
R4922	D0GB471JA057	CHIP RESISTOR	1	
R4923	D0GB471JA057	CHIP RESISTOR	1	
R4925	D0GB472JA057	CHIP RESISTOR	1	
R4926	D0GB472JA057	CHIP RESISTOR	1	
R6001	D0GB102JA057	CHIP RESISTOR	1	
R6002	D0GB102JA057	CHIP RESISTOR	1	
R6003	D0YBR0000020	CHIP RESISTOR	1	
R6004	D0YBR0000020	CHIP RESISTOR	1	
R6005	D0GB102JA057	CHIP RESISTOR	1	
R6006	D0GB273JA057	CHIP RESISTOR	1	
R6007	D0GB822JA057	CHIP RESISTOR	1	
R6008	D0GB222JA057	CHIP RESISTOR	1	
R6011	D0GB822JA057	CHIP RESISTOR	1	
R6012	D0GB681JA057	CHIP RESISTOR	1	
R6013	D0GB221JA057	CHIP RESISTOR	1	
R6014	D0GB103JA057	CHIP RESISTOR	1	
R6016	D0GB102JA057	CHIP RESISTOR	1	
R6017	D0GB222JA057	CHIP RESISTOR	1	
R6018	D0GB102JA057	CHIP RESISTOR	1	
R6019	D0GB681JA057	CHIP RESISTOR	1	
R6022	D0GB221JA057	CHIP RESISTOR	1	
R6023	D0GB221JA057	CHIP RESISTOR	1	
R6024	D0GB102JA057	CHIP RESISTOR	1	
R6025	D0GB221JA057	CHIP RESISTOR	1	
R6026	D0GB103JA057	CHIP RESISTOR	1	
R6027	D0GB103JA057	CHIP RESISTOR	1	
R6028	D0GB103JA057	CHIP RESISTOR	1	
R6029	D0GB472JA057	CHIP RESISTOR	1	
R6030	D0GB472JA057	CHIP RESISTOR	1	
R6031	D0GB223JA057	CHIP RESISTOR	1	
R6109	D0GB105JA057	CHIP RESISTOR	1	
R6115	D0GB471JA057	CHIP RESISTOR	1	
R6117	D0GB181JA057	CHIP RESISTOR	1	
R6120	D0GB102JA057	CHIP RESISTOR	1	
R6121	D0GB561JA057	CHIP RESISTOR	1	
R6122	D0GB561JA057	CHIP RESISTOR	1	
R6123	D0GB241JA057	CHIP RESISTOR	1	
R6131	D0YBR0000020	CHIP RESISTOR	1	
R6201	D0GB103JA057	CHIP RESISTOR	1	
R6309	D0GB272JA057	CHIP RESISTOR	1	
R6401	D0GB221JA057	CHIP RESISTOR	1	
R6402	D0GB153JA057	CHIP RESISTOR	1	
R6403	D0GB103JA057	CHIP RESISTOR	1	
R6404	D0GB471JA057	CHIP RESISTOR	1	
R6405	D0GB223JA057	CHIP RESISTOR	1	
R6406	D0GB474JA057	CHIP RESISTOR	1	
R6407	D0GB153JA057	CHIP RESISTOR	1	
R6408	D0GB104JA057	CHIP RESISTOR	1	
R6409	D0GB104JA057	CHIP RESISTOR	1	
R6410	D0GB224JA057	CHIP RESISTOR	1	
R6411	D0GB225JA057	CHIP RESISTOR	1	
R6412	D0GB273JA057	CHIP RESISTOR	1	
R6413	D0GB473JA057	CHIP RESISTOR	1	
R6414	D0GB472JA057	CHIP RESISTOR	1	
R7301	D0GB912JA057	CHIP RESISTOR	1	*1
R7302	D0GB122JA057	CHIP RESISTOR	1	*1
R7302	D0YBR0000020	CHIP RESISTOR	1	*2
R7303	D0YBR0000020	CHIP RESISTOR	1	*1
R7304	D0YBR0000020	CHIP RESISTOR	1	*2
R7305	D0GB101JA057	CHIP RESISTOR	1	
R7306	D0GB101JA057	CHIP RESISTOR	1	
R7307	D0GB562JA057	CHIP RESISTOR	1	*1
R7308	D0GB221JA057	CHIP RESISTOR	1	
R7309	D0GB273JA057	CHIP RESISTOR	1	*1
R7310	D0GB472JA057	CHIP RESISTOR	1	*1
R7310	D0YBR0000020	CHIP RESISTOR	1	*2
R7311	D0GB752JA057	CHIP RESISTOR	1	*1
R7312	D0GB472JA057	CHIP RESISTOR	1	*1
R7312	D0YBR0000020	CHIP RESISTOR	1	*2
R7316	D0GB103JA057	CHIP RESISTOR	1	*2
R7328	D0GB682JA057	CHIP RESISTOR	1	*1
R7328	D0GB221JA057	CHIP RESISTOR	1	*2
R7329	D0GB682JA057	CHIP RESISTOR	1	*1
R7329	D0GB221JA057	CHIP RESISTOR	1	*2
R7330	D0GB332JA057	CHIP RESISTOR	1	*1
R7331	D0GB332JA057	CHIP RESISTOR	1	*1
R7401	D0GB103JA057	CHIP RESISTOR	1	
R7502	D0GB391JA057	CHIP RESISTOR	1	
R7503	D0GB391JA057	CHIP RESISTOR	1	
R7504	D0GB271JA057	CHIP RESISTOR	1	
R7507	D0GB182JA057	CHIP RESISTOR	1	
R7508	D0GB182JA057	CHIP RESISTOR	1	
R7509	D0GB182JA057	CHIP RESISTOR	1	
R7510	D0GB562JA057	CHIP RESISTOR	1	
R7515	D0GB221JA057	CHIP RESISTOR	1	
R7517	D0YBR0000020	CHIP RESISTOR	1	
R7518	D0YBR0000020	CHIP RESISTOR	1	
R7519	D0GB101JA057	CHIP RESISTOR	1	
R7520	D0GB101JA057	CHIP RESISTOR	1	
R7521	D0GB101JA057	CHIP RESISTOR	1	
R7522	D0GB473JA057	CHIP RESISTOR	1	
R7523	D0YBR0000020	CHIP RESISTOR	1	
R7524	D0GB103JA057	CHIP RESISTOR	1	
R7525	D0GB273JA057	CHIP RESISTOR	1	
R7801	D0GB332JA057	CHIP RESISTOR	1	
R7802	D0GB183JA057	CHIP RESISTOR	1	
R7803	D0GB332JA057	CHIP RESISTOR	1	
R7804	D0GB183JA057	CHIP RESISTOR	1	
R7818	ERDS2TJ471T	CARBON RESISTOR	1	
R7819	ERDS2TJ471T	CARBON RESISTOR	1	
R7850	D0YBR0000020	CHIP RESISTOR	1	*2
R7851	D0YBR0000020	CHIP RESISTOR	1	
R7901	D0GB562JA057	CHIP RESISTOR	1	
R7902	D0GB470JA057	CHIP RESISTOR	1	
R7904	ERDS2TJ271T	CARBON RESISTOR	1	
R7905	D0GB473JA057	CHIP RESISTOR	1	
R7906	D0GB473JA057	CHIP RESISTOR	1	
R9102	D0GB103JA057	CHIP RESISTOR	1	
R9143	D0GB331JA057	CHIP RESISTOR	1	
R9144	D0GB473JA057	CHIP RESISTOR	1	
R9145	D0GB223JA057	CHIP RESISTOR	1	
R9146	D0GB102JA057	CHIP RESISTOR	1	
R9301	D0YBR0000020	CHIP RESISTOR	1	
R9302	D0YBR0000020	CHIP RESISTOR	1	
R9306	D0HB752ZA002	METAL FILM RESISTOR	1	
R9307	D0HB752ZA002	METAL FILM RESISTOR	1	
R9308	D0HB123ZA002	METAL FILM RESISTOR	1	
R9309	D0HB123ZA002	METAL FILM RESISTOR	1	

Ref. No.	Part No.	Part Name & Description	PCS	Remarks
R9310	D0GB473JA057	CHIP RESISTOR	1	
R9311	D0GB473JA057	CHIP RESISTOR	1	
R9312	D0GB471JA057	CHIP RESISTOR	1	
R9313	D0YBR0000020	CHIP RESISTOR	1	
R9314	D0YBR0000020	CHIP RESISTOR	1	
R9315	D0GB471JA057	CHIP RESISTOR	1	
R9316	D0GB221JA057	CHIP RESISTOR	1	
R9317	D0GB221JA057	CHIP RESISTOR	1	
R9331	D1BB10020004	CHIP RESISTOR	1	
R9332	D1BB20010002	CHIP RESISTOR	1	
R9333	D1BB2201A010	CHIP RESISTOR	1	
R9334	D1BB20020003	CHIP RESISTOR	1	
R9700	J0JCC0000103	BEAD CORE	1	
R9701	D0GB103JA057	CHIP RESISTOR	1	
R9702	D0GB103JA057	CHIP RESISTOR	1	
R9703	J0JCC0000103	BEAD CORE	1	
R9704	D0GB102JA057	CHIP RESISTOR	1	
R9705	D1BB10020004	CHIP RESISTOR	1	
R9706	D1BB4701A010	CHIP RESISTOR	1	
R9707	J0JCC0000103	BEAD CORE	1	
R9708	D0GB102JA057	CHIP RESISTOR	1	
R9709	D0GB472JA057	CHIP RESISTOR	1	
R9710	ERJ6GEY0R00Z	CHIP RESISTOR	1	
R9711	D0GB474JA057	CHIP RESISTOR	1	
R9712	D0GB153JA057	CHIP RESISTOR	1	
R9713	J0JCC0000103	BEAD CORE	1	
R9714	J0JCC0000103	BEAD CORE	1	
R9715	D0GB561JA057	CHIP RESISTOR	1	
R9716	D0GB181JA057	CHIP RESISTOR	1	
R9717	D0GB104JA057	CHIP RESISTOR	1	
R9720	D0GB101JA057	CHIP RESISTOR	1	
R9721	D0GB101JA057	CHIP RESISTOR	1	
R9722	D0GB101JA057	CHIP RESISTOR	1	
R9724	D0GB101JA057	CHIP RESISTOR	1	
R9725	D0GB103JA057	CHIP RESISTOR	1	
R9726	D0GB101JA057	CHIP RESISTOR	1	
R9730	D0GB101JA057	CHIP RESISTOR	1	
R9731	D0GB103JA057	CHIP RESISTOR	1	
R9736	D0GB473JA057	CHIP RESISTOR	1	
R9738	D0GB223JA057	CHIP RESISTOR	1	
R9739	D0GB104JA057	CHIP RESISTOR	1	
R9742	D0GB101JA057	CHIP RESISTOR	1	
R9744	D0GB101JA057	CHIP RESISTOR	1	
R9745	D0GB101JA057	CHIP RESISTOR	1	
R9747	D0GB101JA057	CHIP RESISTOR	1	
R9748	D0GB101JA057	CHIP RESISTOR	1	
R9749	D0GB101JA057	CHIP RESISTOR	1	
R9750	D0GB101JA057	CHIP RESISTOR	1	
R9752	D0GB101JA057	CHIP RESISTOR	1	
R9753	D1BB3902A010	CHIP RESISTOR	1	
R9754	D1BB4302A010	CHIP RESISTOR	1	
R9756	D0GB822JA057	CHIP RESISTOR	1	
R9757	D0GB822JA057	CHIP RESISTOR	1	
R9758	D0GB822JA057	CHIP RESISTOR	1	
R9759	D0GB472JA057	CHIP RESISTOR	1	
R9760	D0GB472JA057	CHIP RESISTOR	1	
R9764	D0GB101JA057	CHIP RESISTOR	1	
R9765	D0GB332JA057	CHIP RESISTOR	1	
R9766	D0GB101JA057	CHIP RESISTOR	1	
R9767	D0GB104JA057	CHIP RESISTOR	1	
R9768	D0GB681JA057	CHIP RESISTOR	1	
R9769	D0GB101JA057	CHIP RESISTOR	1	
R9772	D0GB101JA057	CHIP RESISTOR	1	
R9773	D0GB202JA057	CHIP RESISTOR	1	
R9774	D0GB202JA057	CHIP RESISTOR	1	
R9775	D0GB103JA057	CHIP RESISTOR	1	
R9776	D0GB101JA057	CHIP RESISTOR	1	
R9777	D0GB101JA057	CHIP RESISTOR	1	
R9779	D0GB392JA057	CHIP RESISTOR	1	
R9780	D0GB102JA057	CHIP RESISTOR	1	
R9781	D0GB104JA057	CHIP RESISTOR	1	
R9782	D0GB101JA057	CHIP RESISTOR	1	
R9783	D0GB104JA057	CHIP RESISTOR	1	

Ref. No.	Part No.	Part Name & Description	PCS	Remarks
R9784	D0GB101JA057	CHIP RESISTOR	1	
R9785	D0GB101JA057	CHIP RESISTOR	1	
R9786	D0GB101JA057	CHIP RESISTOR	1	
R9788	D0GB153JA057	CHIP RESISTOR	1	
R9791	D0GB101JA057	CHIP RESISTOR	1	
R9792	D0GB101JA057	CHIP RESISTOR	1	
R9794	D0GB473JA057	CHIP RESISTOR	1	
R9795	D0GB221JA057	CHIP RESISTOR	1	
R9798	D0GB472JA057	CHIP RESISTOR	1	
R9800	D0GB101JA057	CHIP RESISTOR	1	
R9801	D0GB101JA057	CHIP RESISTOR	1	
R9803	D0GB223JA057	CHIP RESISTOR	1	
R9804	D0GB220JA057	CHIP RESISTOR	1	
R9805	ECJ1VC1H100D	CHIP CAPACITOR	1	
R9806	ECJ1VC1H100D	CHIP CAPACITOR	1	
R9807	ECJ1VC1H100D	CHIP CAPACITOR	1	
R9808	ECJ1VC1H100D	CHIP CAPACITOR	1	
R9809	ERJ3GEYJ911V	CHIP RESISTOR	1	
R9810	D0GB473JA057	CHIP RESISTOR	1	
R9811	D0GB473JA057	CHIP RESISTOR	1	
R9815	D0GB101JA057	CHIP RESISTOR	1	
R9816	D0GB101JA057	CHIP RESISTOR	1	
R9824	D0GB101JA057	CHIP RESISTOR	1	
R9825	D0GB101JA057	CHIP RESISTOR	1	
R9827	D0YBR0000020	CHIP RESISTOR	1	
R9829	D0GB472JA057	CHIP RESISTOR	1	
R9832	D0YBR0000020	CHIP RESISTOR	1	
R9833	D0YBR0000020	CHIP RESISTOR	1	
R9834	D0YBR0000020	CHIP RESISTOR	1	
R9835	D0YBR0000020	CHIP RESISTOR	1	
R9836	D0YBR0000020	CHIP RESISTOR	1	
R9837	D0YBR0000020	CHIP RESISTOR	1	
R9838	D0YBR0000020	CHIP RESISTOR	1	
R9839	D0YBR0000020	CHIP RESISTOR	1	
R9840	D0YBR0000020	CHIP RESISTOR	1	
R9841	D0YBR0000020	CHIP RESISTOR	1	
S1531	K0C111A00006	SAFETY TAB SWITCH	1	
S1532	K0ZZ00000598	MODE SWITCH	1	
S7501	EVQ11G07K	TOUCH SWITCH	1	
S7502	EVQ11G07K	TOUCH SWITCH	1	
S7503	EVQ11G07K	TOUCH SWITCH	1	
S7504	EVQ11G07K	TOUCH SWITCH	1	
S7505	EVQ11G07K	TOUCH SWITCH	1	
S7506	EVQ11G07K	TOUCH SWITCH	1	
S7507	EVQ11G07K	TOUCH SWITCH	1	
S7801	EVQ11G07K	TOUCH SWITCH	1	
S7802	EVQ11G07K	TOUCH SWITCH	1	
S7803	EVQ11G07K	TOUCH SWITCH	1	
S7804	EVQ11G07K	TOUCH SWITCH	1	
S7805	EVQ11G07K	TOUCH SWITCH	1	
S7806	EVQ11G07K	TOUCH SWITCH	1	
T1101	ETS29AZ2M6AC	TRANSFORMER	1	⚠
T4001	G2A472C00003	BIAS TRANSFORMER	1	
T7901	G4D1A0000117	SWITCH. TRANSFORMER	1	
TU7801	ENGF7503GF	TUNER	1	
W10	ERJ6GEY0R00Z	CHIP RESISTOR	1	
W106	D0YBR0000020	CHIP RESISTOR	1	
W11	ERJ6GEY0R00Z	CHIP RESISTOR	1	
W110	D0YBR0000020	CHIP RESISTOR	1	
W128	D0YBR0000020	CHIP RESISTOR	1	
W129	D0YBR0000020	CHIP RESISTOR	1	
W130	D0YBR0000020	CHIP RESISTOR	1	
W132	D0YBR0000020	CHIP RESISTOR	1	
W134	D0YBR0000020	CHIP RESISTOR	1	
W149	D0YBR0000020	CHIP RESISTOR	1	
W150	ERJ6GEY0R00Z	CHIP RESISTOR	1	
W151	D0YBR0000020	CHIP RESISTOR	1	
W152	D0YBR0000020	CHIP RESISTOR	1	
W157	D0YBR0000020	CHIP RESISTOR	1	
W18	ERJ6GEY0R00Z	CHIP RESISTOR	1	
W19	ERJ6GEY0R00Z	CHIP RESISTOR	1	
W195	D0YBR0000020	CHIP RESISTOR	1	
W196	ERJ6GEY0R00Z	CHIP RESISTOR	1	

Ref. No.	Part No.	Part Name & Description	PCS	Remarks
W20	ERJ6GEY0R00Z	CHIP RESISTOR	1	
W21	ERJ6GEY0R00Z	CHIP RESISTOR	1	
W216	D0YBR0000020	CHIP RESISTOR	1	
W22	ERJ6GEY0R00Z	CHIP RESISTOR	1	
W226	ERJ6GEY0R00Z	CHIP RESISTOR	1	
W227	ERJ6GEY0R00Z	CHIP RESISTOR	1	
W23	ERJ6GEY0R00Z	CHIP RESISTOR	1	
W234	D0YBR0000020	CHIP RESISTOR	1	
W235	D0YBR0000020	CHIP RESISTOR	1	
W24	ERJ6GEY0R00Z	CHIP RESISTOR	1	
W25	ERJ6GEY0R00Z	CHIP RESISTOR	1	
W259	D0YBR0000020	CHIP RESISTOR	1	
W26	ERJ6GEY0R00Z	CHIP RESISTOR	1	
W268	D0YBR0000020	CHIP RESISTOR	1	
W269	D0YBR0000020	CHIP RESISTOR	1	
W270	D0YBR0000020	CHIP RESISTOR	1	
W271	D0YBR0000020	CHIP RESISTOR	1	
W272	D0YBR0000020	CHIP RESISTOR	1	
W273	D0YBR0000020	CHIP RESISTOR	1	
W274	D0YBR0000020	CHIP RESISTOR	1	
W30	ERJ6GEY0R00Z	CHIP RESISTOR	1	
W31	ERJ6GEY0R00Z	CHIP RESISTOR	1	
W32	ERJ6GEY0R00Z	CHIP RESISTOR	1	
W33	ERJ6GEY0R00Z	CHIP RESISTOR	1	
W4	ERJ6GEY0R00Z	CHIP RESISTOR	1	
W400	ERJ6GEY0R00Z	CHIP RESISTOR	1	
W401	ERJ6GEY0R00Z	CHIP RESISTOR	1	
W402	ERJ6GEY0R00Z	CHIP RESISTOR	1	
W404	D0YBR0000020	CHIP RESISTOR	1	
W405	ERJ6GEY0R00Z	CHIP RESISTOR	1	
W407	D0YBR0000020	CHIP RESISTOR	1	
W408	D0YBR0000020	CHIP RESISTOR	1	
W409	D0YBR0000020	CHIP RESISTOR	1	
W410	D0YBR0000020	CHIP RESISTOR	1	
W411	D0YBR0000020	CHIP RESISTOR	1	
W412	ERJ6GEY0R00Z	CHIP RESISTOR	1	
W414	ERJ6GEY0R00Z	CHIP RESISTOR	1	
W421	D0YBR0000020	CHIP RESISTOR	1	
W422	D0YBR0000020	CHIP RESISTOR	1	
W423	D0YBR0000020	CHIP RESISTOR	1	
W435	ERJ6GEY0R00Z	CHIP RESISTOR	1	
W449	ERJ6GEY0R00Z	CHIP RESISTOR	1	
W467	ERJ6GEY0R00Z	CHIP RESISTOR	1	
W472	ERJ6GEY0R00Z	CHIP RESISTOR	1	
W474	D0YBR0000020	CHIP RESISTOR	1	
W478	ERJ6GEY0R00Z	CHIP RESISTOR	1	
W4807	D0YBR0000020	CHIP RESISTOR	1	
W4808	D0YBR0000020	CHIP RESISTOR	1	
W4809	D0YBR0000020	CHIP RESISTOR	1	
W4810	D0YBR0000020	CHIP RESISTOR	1	
W4811	D0YBR0000020	CHIP RESISTOR	1	
W4814	D0YBR0000020	CHIP RESISTOR	1	
W4815	D0YBR0000020	CHIP RESISTOR	1	
W4816	D0YBR0000020	CHIP RESISTOR	1	
W4817	D0YBR0000020	CHIP RESISTOR	1	
W4819	D0YBR0000020	CHIP RESISTOR	1	
W4820	D0YBR0000020	CHIP RESISTOR	1	
W4821	D0YBR0000020	CHIP RESISTOR	1	
W485	ERJ6GEY0R00Z	CHIP RESISTOR	1	
W49	ERJ6GEY0R00Z	CHIP RESISTOR	1	
W512	D0YBR0000020	CHIP RESISTOR	1	
W514	D0YBR0000020	CHIP RESISTOR	1	
W515	D0YBR0000020	CHIP RESISTOR	1	
W516	D0YBR0000020	CHIP RESISTOR	1	
W517	D0YBR0000020	CHIP RESISTOR	1	
W519	D0YBR0000020	CHIP RESISTOR	1	
W52	D0YBR0000020	CHIP RESISTOR	1	
W520	D0YBR0000020	CHIP RESISTOR	1	
W521	ERJ6GEY0R00Z	CHIP RESISTOR	1	
W529	D0YBR0000020	CHIP RESISTOR	1	
W53	ERJ6GEY0R00Z	CHIP RESISTOR	1	
W530	D0YBR0000020	CHIP RESISTOR	1	
W531	D0YBR0000020	CHIP RESISTOR	1	
W532	D0YBR0000020	CHIP RESISTOR	1	
W6	ERJ6GEY0R00Z	CHIP RESISTOR	1	
W65	D0YBR0000020	CHIP RESISTOR	1	
W66	D0YBR0000020	CHIP RESISTOR	1	
W67	D0YBR0000020	CHIP RESISTOR	1	
W7	ERJ6GEY0R00Z	CHIP RESISTOR	1	
W702	D0YBR0000020	CHIP RESISTOR	1	
W703	ERJ6GEY0R00Z	CHIP RESISTOR	1	
W710	D0YBR0000020	CHIP RESISTOR	1	
W711	D0YBR0000020	CHIP RESISTOR	1	
W713	D0YBR0000020	CHIP RESISTOR	1	
W716	D0YBR0000020	CHIP RESISTOR	1	
W720	D0YBR0000020	CHIP RESISTOR	1	
W723	D0YBR0000020	CHIP RESISTOR	1	
W724	D0YBR0000020	CHIP RESISTOR	1	
W725	D0YBR0000020	CHIP RESISTOR	1	
W726	D0YBR0000020	CHIP RESISTOR	1	
W727	ERJ6GEY0R00Z	CHIP RESISTOR	1	
W729	D0YBR0000020	CHIP RESISTOR	1	
W730	D0YBR0000020	CHIP RESISTOR	1	
W731	ERJ6GEY0R00Z	CHIP RESISTOR	1	
W732	D0YBR0000020	CHIP RESISTOR	1	
W734	D0YBR0000020	CHIP RESISTOR	1	
W735	ERJ6GEY0R00Z	CHIP RESISTOR	1	
W736	ERJ6GEY0R00Z	CHIP RESISTOR	1	
W737	D0YBR0000020	CHIP RESISTOR	1	
W738	ERJ6GEY0R00Z	CHIP RESISTOR	1	
W739	D0YBR0000020	CHIP RESISTOR	1	
W740	D0YBR0000020	CHIP RESISTOR	1	
W741	ERJ6GEY0R00Z	CHIP RESISTOR	1	
W744	D0YBR0000020	CHIP RESISTOR	1	
W745	ERJ6GEY0R00Z	CHIP RESISTOR	1	
W746	ERJ6GEY0R00Z	CHIP RESISTOR	1	
W747	D0YBR0000020	CHIP RESISTOR	1	
W748	D0YBR0000020	CHIP RESISTOR	1	
W7500	ERJ6GEY0R00Z	CHIP RESISTOR	1	
W7504	ERJ6GEY0R00Z	CHIP RESISTOR	1	
W76	ERJ6GEY0R00Z	CHIP RESISTOR	1	
W766	D0YBR0000020	CHIP RESISTOR	1	
W767	D0YBR0000020	CHIP RESISTOR	1	
W768	D0YBR0000020	CHIP RESISTOR	1	
W8	ERJ6GEY0R00Z	CHIP RESISTOR	1	
W9	ERJ6GEY0R00Z	CHIP RESISTOR	1	
X3001	H0D443400040	CRYSTAL OSCILLATOR	1	
X3002	H0D357400067	CRYSTAL OSCILLATOR	1	
X6001	H0D120500009	CRYSTAL OSCILLATOR	1	
X7301	H0H400400006	CRYSTAL OSCILLATOR	1	*1
X7301	H0D245500016	CRYSTAL OSCILLATOR	1	*2
X9701	H0D100500018	OSCILLATOR	1	
X9702	H0A327200108	CRYSTAL OCSILLATOR	1	
ZA1201	UBXPH512-02	HEATSINK	1	
ZA1202	XTN3+8FFJ	SCREW	1	
ZJ6001	K9ZZ00001279	EARTH FITTING	1	
ZJ9103	K9ZZ00001279	EARTH FITTING	1	
ZJ9107	K9ZZ00001279	EARTH FITTING	1	

18.5. SERVICE FIXTURE AND TOOLS

Ref. No.	Part No.	Part Name & Description	PCS	Remarks
	RFKZ03D01K	Lead Free Solder (0.3 mm / 100 g Reel)	1	(SPC)
	RFKZ06D01K	Lead Free Solder (0.6 mm / 100 g Reel)	1	(SPC)
	RFKZ010D01	Lead Free Solder (1.0 mm / 100 g Reel)	1	(SPC)
	RFKZ0316	Solder Remover (Lead Free 10 W temperature Solder / 180 g	1	(SPC)
	RFKZ0328	Flux	1	(SPC)
	RFKZ0329	Bottle of Flux	1	(SPC)
	RFKZ0240	Extension Cable (Main P.C.B. - Power & Digital I/F P.C.B. / 19 pin)	1	(SPC)
	RFKZ0327	Extension Cable (Main P.C.B. - Power & Digital I/F P.C.B. / 15 pin)	2	(SPC)
	RFKZ0365	Extension Cable (Power Digital I/F P.C.B. - Digital P.C.B. / 64 pin)	1	(SPC)
	RFKZ0239	Extension Cable (to Front Jack P.C.B. and FL P.C.B. / 10 pin)	4	(SPC)
	JZS0484	Eject Pin	1	(SPC)
	for VHS			
	VFJ8125H3F	PAL VHS Alignment Tape	1	(SPC)
	VFK0329	Post Adjustment Screwdriver	1	(SPC)
	VFK0330	Fine Adjustment Gear Driver	1	(SPC)